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THE ELEPAIO OF HAWAII.

BY H. W. HENSHAW.

THE ELEPAIO, as the natives call the several members of the genus *Chasiempis*, is one of the most beautiful, as it is one of the most interesting, of all Hawaiian birds. Clad in modest but pleasing colors, confiding to a degree, graceful in motion and interesting in habits, it is the best known, as it is one of the most abundant, of the Island species.

In the three islands the bird inhabits, it is widely diffused, frequenting the forest almost down to the sea, where the forest reaches so far, and yet ranging far upwards towards the timber limit. The Elepaio does not migrate from place to place in search of food, but inhabits the same locality year in and year out, being apparently the last bird to forsake a tract of forest when, as often happens, encroachments of any kind have caused its abandonment by other and more sensitive species. Thus sedentary, the bird is more continuously subject to environmental influences than some other Hawaiian birds which move about more or less in search of food, and hence might be expected to differentiate into varietal forms. This, as we shall see later, is the case.

The insular distribution of the Elepaio is peculiar. Few if any of the endemic species would seem to be so well adapted to wide dispersal in the group as this little flycatcher. Its habits are a combination of the wren and flycatcher, the former decidedly predominating. The Elepaio would thus seem to be quite capable of

securing a permanent foothold, and of securing a livelihood, under conditions that might prove fatal to a flycatcher of more specialized habits.

Yet, as a matter of fact, the Elepaio occupies but three islands of the group, viz. Kauai, Oahu and Hawaii, the two oldest and the most northern of the group, and the youngest and the southernmost member. The bird is thus absent on the three middle islands, two of which, at least, are well adapted to its habits. A flight of twenty miles would carry the bird from Hawaii to Maui, and the absence of the bird from this latter island, and from Molokai, is a puzzling and interesting fact in bird distribution.

It is difficult to understand, indeed, how the bird originally reached the island of Hawaii from Oahu, the two islands being about one hundred miles apart, unless by way of the nearer and intermediate islands of Molokai, Lauai and Maui. Upon the other hand it does not seem at all probable that the bird once occupied either, or all three, of the intermediate islands, and either voluntarily abandoned them, or became extinct there.

However if final extinction was known to have followed the bird's occupancy of either one, or all three, of the above islands, it would add but one more instance to the several already known where birds seem to have found their way to, or have originated upon, the islands, to have gained a more or less firm foothold, and then to have perished off the face of the earth from no determinable cause.

That the Hawaii Elepaio is a direct derivative from the Oahu form (*gayi*) rather than from that of Kauai (*sclateri*) is highly probable. Not only is Oahu much nearer to Hawaii, but the Oahu form much more nearly resembles birds from Hawaii than does the form from Kauai. As to which of the two islands, Oahu or Kauai, was first reached by *Chasiempis* from its original home far to the southward, there seems to be no evidence, although, as Kauai is much the older island, it is permissible to infer that the bird's first foothold was there.

From the time when first described down to a comparatively recent period, the members of the genus have been the cause of much confusion to writers. This is due chiefly to the fact that the juvenile plumage differs markedly from the adult dress and,

as the bird breeds in its juvenile and transitional plumages, *i.e.*, before it is a year old, the young and the old more than once have been described as different species.

The writer is not aware that the habit of such precocious breeding is paralleled among American birds of the temperate zone, but it is common enough among Hawaiian birds and, probably, elsewhere in the subtropics and the tropics. Not only do the juveniles of the genus *Chasiempis* breed, mating with each other though perhaps more often with older birds, but the same habit is observable, though perhaps not so commonly, in the genera *Psittirostra*, *Heterorynchus* and *Phæornis*. In fact it is probable that all Hawaiian birds begin to breed at a rather precocious age as compared with their kind in the temperate zones.

With the knowledge that the juvenile and adult states of *Chasiempis* were *stages* of but one species, and that the change of plumage was uniform in the three members of the genus — first elucidated by Messrs. Palmer, Wilson and Perkins — the chief cause of confusion in the group was eliminated. The sequence of change from the juvenile through the transition stage to the final adult plumage is now pretty well understood, though the length of time necessary to the assumption of the final dress is not yet made out. It also remains to consider the status of the bird found upon the island of Hawaii, which is the main object of the present paper.

The island of Hawaii is divisible roughly into two parts on the basis of its rainfall, much of the windward side having a rainfall of from over 100 to nearly 200 inches a year; while the fall on most of the leeward side runs from 18 to less than 100 inches.

With such marked differences of rainfall, accompanied by corresponding differences of climate and vegetation, the ornithologist, familiar with the results of climatic variation upon American birds, will naturally expect to find similar variation among island species. The effects of lesser rainfall and of climatic changes upon the latter appear, however, to be much less noticeable than might be expected from the above bare statement of the facts.

Moreover they are probably somewhat less apparent to-day than formerly, when the forest extended nearer, though in most parts rarely perhaps, to the sea. For it is in the lowlands that the rain-

fall is comparatively small, is more irregular and varies most widely locally. This shore belt is now, and for many years has been, practically barren of native birds owing to its deforestation, the birds being chiefly confined to the middle and heavily forested region, from 1500 to 4000 feet altitude, where the rainfall and other conditions are more uniform than below.

Moreover, as above stated, several of the species move about in search of food, and although such movements are by no means the equivalent of migration as the term is usually understood, the effect is similar in diminishing, or altogether preventing, the results of continued residence the year round under similar conditions of environment. The islands, too, for the most part are so small, and the local conditions vary so widely, that a bird must be local indeed to permit of geographical variation.

In comparing series of several island species from regions of comparatively small rainfall with others having a maximum amount the difference in depth of coloration, if any, appears to be very slight. Specimens of *Chlorodrepanis virens* from the leeward side of the island seem to average somewhat paler than those from the windward side. The same may prove to be true of *Phæornis obscurus*, though at present the writer has a sufficient series of this species only from the windward side. In neither case, however, do the differences seem to be sufficient for the recognition of geographical races. It is otherwise in the case of the Elepaio.

Of this bird there are two distinct forms the habitats of which seem to conform in the main to regions of greater and lesser rainfall. On the windward side of the island, from just south of the Volcano of Kilauea to the neighborhood of Ookala, a distance of some eighty miles or more (embracing many thousand acres of deep forest) is found the form described by Dr. Stejneger as *C. ridgwayi*, the earlier described *sandwichensis* apparently inhabiting the remainder of the island.

Descriptions of the two forms are given below, but it may be briefly stated that *ridgwayi* is characterized by a rich, dark brown above, almost a chestnut, with chestnut face markings; while *sandwichensis* is of a much lighter brown above, with more white on the tail, and the chestnut face markings are mostly replaced by pure white.

In the deep forests of windward Hawaii the Elepaio is particularly abundant and, in addition to over one hundred specimens in hand, the writer has examined in the course of his field studies probably upwards of a thousand individuals; for the bird is so tame and so curious that it may be called up close to the observer and every marking may be discerned. In all the number that have come under observation, in the field and in the closet, but three individuals have been found from the region above mentioned that show traces of a white loral stripe indicative of the other form.

Near the above named points however, Ookala on the north and the Volcano on the south, the two forms come together, and here intermediate specimens abound, not a few, indeed, being assignable with difficulty. As it is at these points that the rainfall begins markedly to lessen, the cause of the change from one form to the other, with the presence of intermediate specimens, is obvious enough.

As indicative of the part rainfall, with its accompanying changes, plays in the development of the two forms it may be mentioned that in the region above Kealekekua Bay, Kona on the leeward and dry side of the island, where the rainfall rises to over one hundred inches, perhaps ten percent of the Elepaios were found to be intermediate in coloration, the remainder being of the *sandwichensis* type.

That the chestnut-faced bird is not simply a stage of plumage of the white-faced form is sufficiently attested by the fact that it is the final adult state of all the birds in the extensive region above named, where the white-faced form does not occur at all, and is only indicated in highly exceptional cases.

A word may be added as to the names of the two forms. The description of Gmelin's *sandwichensis* was based upon Latham's 'Sandwich Flycatcher,' and seems to have been that of a young bird, or at least not of an adult, as appears from the non-mention of a white rump, always present in the adult, and the stated yellowish base of the bill, always so in the juvenile bird, never in the adult. The feet of no form of *Chasiempis* are 'black,' but always are blue, lighter blue in the juvenile stage than in the adult.

All things considered, however, it seems better to overlook the shortcomings and inaccuracies of Gmelin's description, and accept

his name, *sandwichensis*, for the white-faced form. Latham's specimen almost certainly came from the region about Kealekekua Bay, if it came from the island of Hawaii at all, as there is a reasonable degree of probability that it did.

Of the applicability of the name *ridgwayi* to the chestnut-faced form there is, of course, not the slightest doubt, although at the time he described the bird Dr. Stejneger appears to have been under the impression that this was the only form upon the island of Hawaii. For this error he is excusable enough, since the author lived more than five years on Hawaii before he saw a specimen of the other form. Indeed it would be possible for a collector to range the forests included in the rainy side of Hawaii a lifetime without making the acquaintance of the white-faced form.

Under the name of *sandwichensis* Mr. Rothschild has described both forms, he appearing to consider the chestnut-faced form an intermediate phase, of which the white-faced form is the final plumage. His figures of *sandwichensis* (opp. p. 71) afford an excellent idea of that form; while his figure of *sandwichensis* 'Fere adult' (opp. p. 75) is a fair representation of *ridgwayi*, though about the head inclining towards the intermediate stage.

As the two birds have been minutely described more than once, though never as related but distinct forms, the descriptions below are purposely made brief, though sufficient for their discrimination.

Chasiempis sandwichensis (*Gm.*). WHITE-FACED ELEPAIO.

Adult male. — Above olive brown, with white streakings on hind neck and middle back; forehead, lores, superciliary stripe and rump pure white; cheeks more or less blackish; wings and tail dark brown; wing-coverts black tipped with white, forming a bar across the greater coverts; under parts as in next form; less chestnut along sides of body and across breast in interrupted patches; all but middle pair of tail feathers tipped with white, the outer ones more broadly; legs and feet blue; upper mandible black with a bluish cast, cutting edge blue; lower mandible blue.

Adult female. — Similar to male but generally with less white about the head, and with whiter throat.

Juvenile. — Similar to the like state of *ridgwayi* but lighter throughout, and with the frontal and superciliary lines plainly indicated.

C. sandwichensis ridgwayi (*Stej.*). CHESTNUT-FACED ELEPAIO.

Adult male. — Color above dark brown with chestnut shade; forehead, lores, a line above eye and sides of head chestnut, the cheeks showing more or less black; wings and tail blackish brown; greater wing-coverts black, tipped with white, thus forming a white wing-bar; middle coverts black-tipped, interrupted with white; chin always, and sometimes most of throat, black; feathers of lower throat for a variable distance tipped with white, which color meets the chestnut of sides of head; breast, sides and flanks light chestnut; belly and under tail-coverts white; three outer tail feathers tipped with white, outer ones more broadly; legs and feet and lower mandible (save tip) blue; upper mandible black with bluish cast; cutting edge blue.

Adult female. — Above lighter brown, with chestnut tinge; all the feathers of throat usually white tipped, though, not rarely, chin black; otherwise like male.

Juvenile. — Above ochraceous brown; bright ochraceous on rump and browner on head; wings and tail dark brown; wing-coverts tipped with ochraceous; below drab gray, passing into white on abdomen; legs and feet light bluish; lower mandible, extreme tip dark brown; upper mandible brownish black.

Adult males of both forms occasionally have the entire throat black (feathers of head and throat of all adults are black at base), with perhaps a few white-tipped feathers on its lower edge. Females may usually be distinguished by the white throats, but occasionally the chin is black and, as some males that have not quite reached the final stage (it is possible that some never assume the highest stage of plumage) are similarly colored, this test is not always reliable.

In some individuals of *sandwichensis* the white on sides of neck meets the white markings on the hind neck, and thus tends to form a nearly complete white collar.

The general tints of the typical *sandwichensis* are lighter than the corresponding plumages of *ridgwayi*. Frequently there is so much white about the head of adult male *sandwichensis* that they can be distinguished as far as seen, they appearing to be white-headed.

At all seasons of the year individuals of both forms are to be found in an intermediate stage of plumage, and, as they breed in this condition, the plumage might almost be described as a definite

phase. However no two individuals are alike. The ochraceous of the rump in this phase is mixed with white, as, also, are the ochraceous wing-bars; the gray of breast and sides is brownish, or even chestnut, while the throat shows white feathers, with more or less black if a male.

In the juvenile phase there is considerable variation in the amount of ochraceous below, some having scarcely any while others are strongly tinged with it.

LIST OF BIRDS OBSERVED IN THE NEIGHBORHOOD OF WEQUETONSING, EMMET CO., MICH., JULY 9 TO JULY 23, 1901.

BY O. WIDMANN.

WEQUETONSING — an Indian name meaning Harbor of Rest — is a reputed summer resort in the northwestern part of Lower Michigan under latitude 45° 30′, thus corresponding to that of central Maine. It is one of several similar resorts clustered in a half circle around Little Traverse Bay, among them, Harbor Point and Harbor Springs on one side, Roaring Brook, Bayview and Petoskey on the other.

As the region has apparently never been examined by any recorder of birds, it is of some interest to learn what the bird fauna consists of during the breeding season. The woods, parts of which are yet in an almost primitive condition, are composed of a variety of deciduous trees with a strong admixture of pines, hemlocks and balsams. Thickets of white cedar are growing along the shore and tamaracks in a swampy place back of Harbor Springs. Not much farming is done in the immediate vicinity of the resorts except at Petoskey, which is quite a town with a considerable permanent population, while the other places are more or less deserted from the latter part of September to the middle of June.

Though under the same latitude as northern Italy and southern France the summers at Wequetonsing are very pleasantly temperated by comfortable winds from Lake Michigan with lovely evenings and cool nights. The place is also reputed for its abundance of pure and cold artesian well water. A railroad, with trains every half hour and many stopping places, connects the resorts from Harbor Springs to Petoskey, a distance of eight miles, and facilitates research very much in so far as it enables one to visit a number of points with little loss of time. Mrs. L. M. Stephenson, our esteemed associate member from Helena, Ark., has a cottage at Wequetonsing, and with her husband, the honorable Judge Marshall Stephenson, kindly helped me in the search for birds, the acquaintance of which they had opportunity to make during a number of seasons.

The list of 73 species is not only interesting for what it contains, but also for what it does not contain, since a good many southern species which might be expected are not represented, while others said to be common in northern Michigan are equally absent from the list.

1. **Larus argentatus smithsonianus**. AMERICAN HERRING GULL. — Herring Gulls in adult and juvenile plumages could daily be seen plying over the bay with headquarters on stakes in the bay outside of Harbor Point where seventeen were counted July 18, mostly in immature dress.

2. **Ardea herodias**. GREAT BLUE HERON. — Only once seen; an early morning visitor to the bay, 3.45 A. M., July 10.

3. **Actitis macularia**. SPOTTED SANDPIPER. — At least a dozen were scattered along the beach with headquarters on the sandbar at the Harbor Point lighthouse.

4. **Ægialitis vocifera**. KILLDEER. — Parties of 4 and 7 were frequenting the meadow and pasture between Weque and Roaring Brook.

5. **Bonasa umbellus**. RUFFED GROUSE. — A hen with chicks in wood near the Indian village, July 13.

6. **Circus hudsonius**. MARSH HAWK. — A female flying over baseball grounds at Weque, July 10.

7. **Accipiter cooperii**. COOPER'S HAWK. — Only once seen, July 9.

8. **Buteo platypterus**. BROAD-WINGED HAWK. — Nest in wood near golf links, where its piercing *re'ee* could be heard whenever somebody approached its nest.

9. **Pandion haliaëtus carolinensis**. AMERICAN OSPREY. — Repeatedly visited the bay flying up and down near shore in early morning.

10. **Coccyzus erythrophthalmus**. BLACK-BILLED CUCKOO. — Seen in two places, carrying food in bill.

11. **Ceryle alcyon.** BELTED KINGFISHER. — Daily seen along bay, but never more than one individual.

12. **Dryobates villosus.** HAIRY WOODPECKER. — In two places only; large birds.

13. **Dryobates pubescens medianus.** DOWNY WOODPECKER. — Very few individuals met with.

14. **Sphyrapicus varius** YELLOW-BELLIED SAPSUCKER. — Only one family met with; Walloon Lake, July 17.

15. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER. — Only one adult bird seen, West Weque.

16. **Colaptes auratus.** FLICKER. — The only common and generally distributed woodpecker.

17. **Cordeiles virginianus.** NIGHTHAWK. — A few every evening and sometimes in the morning.

18. **Chætura pelagica.** CHIMNEY SWIFT. — Not very numerous, but generally distributed, often singly or in twos, young ones not on wing yet.

19. **Trochilus colubris.** RUBY-THROATED HUMMINGBIRD. — Single individuals seen in different localities.

20. **Tyrannus tyrannus.** KINGBIRD. — One of the common birds.

21. **Myiarchus crinitus.** CRESTED FLYCATCHER. — Only two pairs, in deadenings.

22. **Sayornis phœbe.** PHŒBE. — In four places.

23. **Contopus borealis.** OLIVE-SIDED FLYCATCHER. — In two places; in tamarack swamp and between Wequetonsing and Harbor Springs.

24. **Contopus virens.** WOOD PEWEE. — One of the common birds in all woods; feeding fledged or nearly fledged young.

25. **Empidonax traillii alnorum.** ALDER FLYCATCHER. — In three places. Weque, Harbor Springs and Walloon Lake.

26. **Empidonax minimus.** LEAST FLYCATCHER. — Once only; on cultivated land north of Weque.

27. **Otocoris alpestris praticola.** PRAIRIE HORNED LARK. — On field north of Harbor Springs.

28. **Cyanocitta cristata.** BLUE JAY. — Quite common.

29. **Corvus americanus.** AMERICAN CROW. — Common.

30. **Molothrus ater.** COWBIRD. — Common in small troops, mostly young birds feeding in the streets with the House Sparrows; also young out of nest fed by foster parents (Chestnut-sided Warbler at Roaring Brook and Weque; Redstart at Emmet Beach).

31. **Agelaius phœniceus.** RED-WINGED BLACKBIRD. — Noticed but once at Menonaqua Beach.

32. **Sturnella magna.** MEADOWLARK. — Only a few in two or three places.

33. **Quiscalus quiscula æneus.** BRONZED GRACKLE. — A few came to the shore at West Weque, Harbor Springs and Kegomic to gather and carry away food.

34. **Carpodacus purpureus.** PURPLE FINCH. — Its beautiful song heard and several pairs located in immediate vicinity of cottages in several of the resorts, but not a common bird.

35. **Passer domesticus.** HOUSE SPARROW. — Common except at Weque where no nuisances are tolerated. (Neither horse, cattle, dog or cat are allowed to be kept on the association grounds.)

36. **Astragalinus tristis.** AMERICAN GOLDFINCH. — The most conspicuous species during my stay, being everywhere heard and seen, singing, mating, flying, building.

37. **Poœcetes gramineus.** VESPER SPARROW. — Common on farmland, singing much, especially morning and evening; feeding fledged young on fence, also newly hatched in nest by roadside.

38. **Ammodramus sandwichensis savanna.** SAVANNA SPARROW. — One pair (male singing) at Petoskey near water reservoir.

39. **Zonotrichia albicollis.** WHITE-THROATED SPARROW. — One of the common birds on low ground, singing much.

40. **Spizella socialis.** CHIPPING SPARROW. — Numerous around cottages in all resorts; grown young.

41. **Junco hyemalis.** SLATE-COLORED JUNCO. — Pretty common; nesting near dwellings as well as in open woods; had fully grown young and busy with second brood. Occurring on same ground as Chippy, their songs can here be easily compared. Mr. Stephenson found three nests, each one containing only two incubated eggs or newly hatched young.

42. **Melospiza melodia.** SONG SPARROW. — An abundant and prominent songster in and out of towns; seen and heard at all hours of the day. Nest with three small young in lawn only a few yards from occupied dwelling, July 14.

43. **Pipilo erythrophthalmus.** TOWHEE. — Apparently not common. Only a few noticed.

44. **Cyanospiza cyanea.** INDIGO BUNTING. — One of the common and generally distributed songsters.

45. **Piranga erythromelas.** SCARLET TANAGER. — Fairly common and a prominent songster during my stay.

46. **Progne subis.** PURPLE MARTIN. — A small colony at Harbor Springs and a larger one at Petoskey.

47. **Hirundo erythrogaster.** BARN SWALLOW. — Conspicuous about the piers at Weque and Petoskey, and especially numerous at Harbor Springs where they were still feeding young in nests under the piers, while the young of the first brood were fully grown, flying about or resting on roofs and wires. Four nearly grown young in a nest less than 12 feet from ground under the roof of the platform at the Petoskey R. R. station were constantly fed by the parents in the presence of scores of persons waiting for the trains. July 22.

48. **Tachycineta bicolor.** TREE SWALLOW. — Two among the other swallows at Harbor Springs, July 19.

49. **Clivicola riparia.** BANK SWALLOW. — Hunting in small troops

over the bay with headquarters at Harbor Springs, where sometimes over a hundred swallows congregated on the wires at the steamboat landing.

50. **Ampelis cedrorum**. CEDAR WAXWING. — Next to the Goldfinch the most restless bird of the region at this particular time, frequenting treetops for flycatching; small parties dissolve into pairs; nest building July 10.

51. **Vireo olivaceus**. RED-EYED VIREO. — Locally called the Preacher; the most industrious songster of all the woods adjoining the resorts, heard at all hours of the day.

52. **Mniotilta varia**. BLACK AND WHITE WARBLER. — Fairly common in the woods; still in song; had grown young.

53. **Helminthophila rubricapilla**. — NASHVILLE WARBLER. — Found in three places along tamarack swamp; singing yet.

54. **Dendroica æstiva**. YELLOW WARBLER. — None at Weque, but fairly common and in song at Kegomic, Bayview and Petoskey.

55. **Dendroica cærulescens**. BLACK-THROATED BLUE WARBLER. — Pretty common in all woods, where its song was heard at all times of the day and the singing male could be easily detected; female seen but twice; fully grown young July 19.

56. **Dendroica maculosa**. MAGNOLIA WARBLER. — Only one pair located at edge of tamarack swamp, where male was still in song July 22.

57. **Dendroica pensylvanica**. CHESTNUT-SIDED WARBLER. — Fairly common and in song, though feeding grown young out of nest; also feeding grown Cowbird at Weque and Roaring Brook.

58. **Dendroica blackburniæ**. BLACKBURNIAN WARBLER. — Found wherever hemlocks occur; song repeatedly heard and parents seen feeding grown young in treetops.

59. **Dendroica virens**. BLACK-THROATED GREEN WARBLER. — Common in all the woods, occurring together with the Black-throated Blue Warbler and both songs were generally heard together. Fully grown young fed by both parents July 11.

60. **Seiurus aurocapillus**. OVENBIRD. — The Ovenbird, by some called the Teacher, together with the Preacher (*Vireo olivaceus*), filled the woods with song in the early morning hours. It is one of the commonest woodland birds and fed grown young July 14.

61. **Wilsonia canadensis**. CANADIAN WARBLER. — Only in one place, Roaring Brook, feeding young July 20.

62. **Setophaga ruticilla**. AMERICAN REDSTART. — Fairly common songster; most numerous near Emmet Beach, where old males are unusually dark and have a peculiarly shrill song. Old male feeding grown Cowbird July 14.

63. **Galeoscoptes carolinensis**. CATBIRD. — Generally distributed, but not very numerous and song seldom heard.

64. **Harporhynchus rufus**. BROWN THRASHER. — Somewhat more numerous than the Catbird, but song heard only a few times; both species fond of service berries.

65. **Troglodytes aëdon.** HOUSE WREN. — One of the most familiar and, next to the Robin, the best known bird of the resorts, especially at Wequetonsing, where it is held in undeserved esteem, being the rascal who, unsuspected, destroys other birds' eggs from sheer wantonness.

66. **Anorthura hyemalis.** WINTER WREN. — A fairly common inhabitant of all the woods, but much oftener heard than seen, his shrill, unmusical song reaching far through the quiet woods. Had fully grown young.

67. **Sitta carolinensis.** WHITE-BREASTED NUTHATCH. — Only a few individuals were noticed, occurring on same ground as the Red-breasted Nuthatch.

68. **Sitta canadensis.** RED-BREASTED NUTHATCH. — Met with in several places near Harbor Springs and at Roaring Brook; leading grown young July 12.

69. **Parus atricapillus.** CHICKADEE. — Pretty common; moving in family groups.

70. **Hylocichla fuscescens.** WILSON'S THRUSH. — Quite common and song often heard in early morning.

71. **Hylocichla aonalaschkæ pallasii.** HERMIT THRUSH. — Common and in full song, though feeding fledged young.

72. **Merula migratoria.** AMERICAN ROBIN. — The most conspicuous and best liked bird of the resorts, remarkably abundant and confiding, building nests on porches. Begins to sing at 3.45 A. M. with the House Wren, Song and Chipping Sparrows.

73. **Sialia sialis.** BLUEBIRD. — Fairly common on the farmland adjoining the resorts.

BIRDS OF THE ISLAND OF CARRIACOU.

BY JOHN GRANT WELLS.

Part I. *Water Birds.*

CARRIACOU, a dependency of the Island of Grenada, is situated about twenty miles north of that island. It is mountainous, the highest peak, High North, being 980 feet, and next in height comes Chapcau Carré, to the southward, 960 feet. There are several natural harbors, notably Tyrell Bay, from which extends a deep lagoon where ships are docked for repairs, and where delicious oysters are obtained from the roots of the mangrove

trees on its borders. The hills have been much denuded of trees for the purpose of shipbuilding, many small craft, of from five to fifty tons, being continually built here. The island has an area of about thirteen square miles, and a population of 7000. There are no running streams in the island, the water supply being derived from a few natural springs and wells; rain water is also collected in tanks and ponds.

The following account of Carriacou, written in the year 1774, may prove of interest: —

"Cariouacou (its Carib name), about 20 miles in compass, and by those who should be best acquainted with it, represented as one of the fairest and finest spots in this part of America, enjoying a climate equally wholesome and pleasant, a soil wonderfully fertile, abounding with valuable timber, as well as fine fruit trees. But what distinguishes it most, and which induced more than one recommendation to the French Court, is its having a harbor as safe, as spacious, and as commodious as any that this part of the world can boast, and communicating by a narrow, though a deep channel, with a Lagune, in which, without any assistance from art, ships may careen very conveniently."

Owing to the absence of forests in Carriacou, many of the birds found in the neighboring islands of St. Vincent and Grenada are not represented, but on the other hand, there being a large area of swamps and marshes, numbers of the aquatic and wading varieties are to be found, and the extensive pastures on the coast tempt many of the migratory species to visit the island, some stragglers of which remain all the year round. The low, scrubby 'bush' of the hillsides and the cultivated fields of pigeon peas and Indian corn, afford food and shelter to most of the resident birds, whilst the cliffs on the southern and southwestern sides of the island, as also the rocky islets off the coast, are the homes of numerous waterfowl.

From observations extending over a period of six years, I find that there are 39 resident birds and 33 migratory, or "partial residents," thus comparing favorably with the larger island of Barbados, from which 82 species are recorded, of which only 15 are resident.

1. **Podilymbus podiceps** (*Linn.*). GREBE; DIVER. — This bird is not numerous; one or two may occasionally be found in the Lauriston and Union Swamps. It is very shy, and will dive immediately on the approach of any one, and as it is capable of remaining a considerable time under water, and has the habit of rising and just keeping its bill above the surface, it can easily evade notice.

2. **Larus atricilla** *Linn.* LAUGHING GULL; MAUVE. — This gull is a familiar figure all round the coast of the island; large flocks may often be seen sitting on the water, or attending the flocks of Pelicans and demanding their share of each bird's catch, which they often take from the mouth of the pelican, uttering their laughing cry all the while, which the fishermen declare to be *half, half, half.* As these gulls cannot dive, they have to depend for their food on the shoals of sprats and fry that come up to the surface, and they have been known to take large bites from the backs of a fish called corvally which swims near the surface in large numbers. After heavy falls of rain, when the pastures are covered with numerous rain pools, these gulls resort to them in numbers and feed on the earth worms which swarm in the pools; this may often be seen, especially in the Beausejour pasture. The birds are very fearless and tame and will allow any one to approach them quite closely; if one of the birds should be shot and wounded, others will hover over and around it, with cries of distress. They breed on the islets, Isle-de-large being a favorite one, in the months of May and June. No nest is made, the eggs, three to four, being laid on the bare rocks in little depressions, and occasionally in a tuft of grass. The nests are sometimes so numerous and close together that one can hardly walk about without treading on the eggs. When the young are hatched the parent birds go out at an early hour, with much noise, to their feeding places; about 5 A. M. they commence to fly in large numbers from Isle-de-large over Hermitage to the bays on the western side, and from 4 P. M. to dusk they keep returning, laughing and calling to each other all the while. They sometimes fly so low across the yard that they might be caught with the hand or struck with a stick.

The eggs, generally three and occasionally four in number, are dark buff with splashes of brown, sometimes forming a ring round the larger end; they measure 2.30 × 1.85, 2.15 × 1 70, 2.45 × 1.75.

3. **Sterna maxima** *Bodd.* ROYAL TERN. — This beautiful bird is not numerous; seldom more than four or five are seen at a time, fishing and uttering occasionally a harsh grating note. They are fond of perching on buoys or floating bits of wood, the little logs which serve to mark the fish-pots being a favorite roost for them. They breed on the rocks; but I have hitherto been unsuccessful in procuring their eggs. As I write there are a few of then fishing in Hermitage Bay; it is interesting to watch their quick plunges at the fish.

4. **Sterna dougalli** *Montag.* ROSEATE TERN; CARRECT. — A few years ago these birds used to frequent Jack-a-dan Island, off the Port of

Hillsborough, in large numbers; they also used to breed there, but for some reason they have now deserted it, and seem to have made Frigate Island and Rose Rock their nesting places. I have taken their eggs there in May.

The habits of this bird are peculiar. It is most amusing to see them drop down perpendicularly into the sea and plunge under the surface and up again immediately with a small fish. They fish in flocks, and generally roost on the rocks about midday for a rest. Their note is a kind of screech.

The eggs are two in number, generally laid on the bare ground, but sometimes in a grass tuft.

5. **Sterna fuliginosa** *Gmel.* SOOTY TERN; TWAR-OO. — This bird is not abundant in Carriacou, though it breeds in numbers on the islets between this island and Grenada; a few may be seen at Bonaparte Rocks and Isle-de-large.

6. **Sterna anæthetus** *Scop.* BRIDLED TERN. — Numerous at all the little islands, notably at Rose Rock where they nest in colonies during the month of May, where I have taken several clutches of eggs. It is a graceful bird, swift of wing, and is sometimes met with far out at sea fishing, and occasionally sitting on the water in flocks like the Laughing Gull. Like the other members of the same family, they make hardly any nest, a tuft of grass, or a depression in the rock serving as a place for depositing its eggs. These are two in number, light grayish buff with dark brown spots and blotches. They measure 2.12 × 1.37, 2.00 × 1.37.

7. **Anous stolidus** *Linn.* NODDY TERN; MWEN. — These birds are to be met with all around the island, they nest at Isle-de-large, Rose Rock and White Island. At the eastern end of White Island is a conical hill where the Noddy congregates in large numbers. The hill is honey-combed and is just the place for it to deposit its eggs. I have taken several sets of eggs at Rose Rock and Isle-de-large in May; the colony at White Island is inaccessible.

The Noddy is not quite so stupid a bird as he has been described by some writers; it is true that he seems and looks very foolish whilst sitting on his nest, and one would imagine he could be taken by the hand, but just as you expect to hold him he will administer a sharp peck to your hand and fly away, leaving his nest to be despoiled.

The eggs are usually placed in a hole or depression in the rock, and contain from two to three eggs, of a pale gray, thickly spotted with brown.

8. **Puffinus auduboni** *Finsch.* DIABLOTIN. — Though not often seen, as it seldom leaves its hole in the daytime, this bird is very numerous, and lives in holes and under the rocks on most of our little islets, issuing forth at dusk to fish and returning at dawn. They make a most unearthly noise when leaving and returning to their nests, hence the name given to them by the fishermen, which literally means 'little devil.' Bonaparte Rocks are a favourite abode of these birds. When the young arrive at a certain stage they become simply a ball of fat enclosed in down; it is

then that the fishermen take them in large numbers and after salting and drying them, they are taken to the different markets in Grenada where they are readily bought and appear to be much relished by certain people. The following account of my discovery of this bird on Labaye Rock in April, 1888, will give a good description of it and its breeding habits.

About eight years ago numbers of dried birds used to be brought into the market at Grenville for sale; they were young birds and very fat. The men who sold them said they were the young of the Diablotin, and were caught in holes, on a small island to the eastward called Mouchoir Quarre. I endeavored to procure a live one but without avail, and in fact so many improbable stories were told concerning this bird, that I looked upon the 'Diablotin' as a myth, and concluded that the dried birds were the young of some species of gull. My interest in the matter has, however, been recently revived. On Easter Monday, 2nd April, 1888, I paid a visit to a small islet called Labaye Rock, about a mile off the Port of Grenville, a place where I had been on many previous occasions. On exploring the Rock, a young bird was discovered in a hole under a stone; it was covered with down, in fact it seemed like a ball of fat enclosed in down. One of the boatmen pronounced it to be a young Diablotin. This caused me to make a thorough search, with the happy result that I found an adult bird with a young one in one hole, and a full-grown female and one egg in another. The birds on being brought out into the light appeared to be quite foolish, and beyond a feeble attempt to bite seemed to make no effort to escape. I kept them alive for some days; they would take no food during the day, remaining perfectly quiet, but at night they fed on scraps of fish, and at intervals uttered a peculiar cry resembling a cat-howl. They evidently lay but one egg, as only one young was found in each nest, and the egg which I got was highly incubated; it is of a dull white color and measures 2.00 × 1.37.

Col. Feilden discovered this bird breeding in Barbados about the same time, and Dr. Bryant's account of its breeding in the Bahamas, including size of egg, agrees closely with my account of the same.

9. **Oceanites oceanicus** (*Kuhl*). MOTHER CAREY'S CHICKEN.—This bird, which never appears to rest at all, is sometimes seen following in the wake of a sloop, especially if the winds are high, and a stormy sea running; it skims the tops of the waves, then sails down the hollow to mount the next, being quite at home 'on the ocean wave.'

Its breeding habits have not been determined owing to its rarity, and the fact of its not being seen to roost anywhere.

10. **Phaëthon æthereus** *Linn.* TROPIC BIRD; PAILLE-EN-QUEUE; BOATSWAIN.—This is a bold, strong bird, and it takes long flights, being met with many miles out at sea. It is remarkable for the long tail feathers, which have earned for it one of its local names, Paille-en-queue, or straw-in-tail. It frequents Frigate Island and Rose Rock, from which I have taken its eggs. It lays but one egg, placed in a deep hole. The bird is often taken alive whilst sitting, as it has no means of escape if the hand

is thrust into the hole, though it can administer a severe peck with its powerful beak, as I know from personal experience.

The egg is a large one, of a dull purple brown thickly scribbled and spotted with dark purple and brown.

11. **Sula sula** (*Linn.*). BOOBY; FOU.— This bird is not numerous in Carriacou, though large numbers of them inhabit Kik-en-jenny, a rock about ten miles distant; a few of them are seen in the bays around the coast. They are magnificent divers, plunging into the sea like a wedge and emerging a short distance off like a flash, and it is seldom that they miss their prey. They lay one egg only, on the bare ground; the egg is white.

12. **Pelecanus fuscus** *Linn.* BROWN PELICAN; GRAND-GORGE — Very numerous all around the coast, in flocks of 5 to 50, sometimes sitting quietly on the water, or hovering over a shoal of sprats and diving one after the other with loud splashes. They turn right over when they dive, and on emerging from the water they elevate their bills and shake the fish from the pouch down their throats. It is whilst doing this that the Laughing Gull steals any little fish that shows from the pelican's bill, often perching on the pelican's head to enable it to reach the fish easier. I was under the impression that they nested on some of the outlying rocks, but have now determined that they resort to the coast of Florida to breed, during the months of February, March, and April. In May and June they begin to return in numbers, and the young of the year are easily distinguished by the lighter gray color and yellow 'down' on the head. They are 'early birds' at their fishing; from about 5 A. M. they may be seen diving, and some remain fishing until dusk. They roost both on trees and on the rocks. The flesh of the young birds is not to be despised as food, but the old birds are too fishy, though I have seen them eaten with avidity, after being skinned, by the people in the small islands. The skin of the breast is beautiful and makes elegant little mats for the table, and I have seen them made into caps; the pouch can be made into bags for tobacco and has been used to cover a small drum or tambourine.

13. **Fregata aquila** (*Linn.*). MAN-O'WAR BIRD; FRIGATE. — This remarkable bird is a familiar figure; two or three may often be seen sailing majestically over the land, sometimes so high as to appear like black specks. They often hover over the sea and dart down to pick up fish near the surface (as they do not dive), or watch the Boobys fishing, ready to rob them of their prey. It is astonishing how quick this large bird is in its movements; it will pounce upon a booby that has secured a fish and is flying off with it, cause it to disgorge, and the fish will fall, but long before it can reach the water the Man-o'-war Bird has caught it. They may frequently be seen fighting in the air, particularly the old males, which are easily distinguished by the scarlet gular pouch; they fight desperately, opening and shutting the long forked tail like a pair of shears and uttering a grating cry.

They nest in colonies at Kick-en-jenny. They build a large platform of sticks on the figeur trees, and lay but one egg.

14. **Anas boschas** *Linn.* MALLARD. — A rare migrant that visits the island occasionally; I have shot one at Lauristan swamp, the only one seen.

15. **Nettion carolinensis** (*Gmel.*). GREEN-WINGED TEAL. — Numbers of these ducks arrive here in October and frequent the swamps and ponds; some of them remain till March when they become quite fat and are excellent for the table. They afford fine sport; I have shot numbers of them at Lauriston Pond, from January to March. A straggler or two may remain, but they generally leave before the middle of April.

16. **Querquedula discors** (Linn.). BLUE-WINGED TEAL; CERCELLE. — This little duck arrives in September and October, and flocks of 10 to 20 may be seen in the mangrove swamps; they also frequent the rain pools in the pastures and some of the ponds; they afford good sport and are in fine condition in the months of February and March. A few of them remain all the year, but I have no authentic account of their breeding here, though they do breed at Isle-de-Rhoude.

17. **Erismatura jamaicensis** (*Gmel.*). RUDDY DUCK; RED DIVER. — This duck is a resident, and breeds in Lauriston Pond. I have taken their eggs in January. The bright blue bill and chestnut plumage of the male bird make it conspicuous. They are very difficult to shoot, as at the least motion of the sportsman they will disappear under water, just sinking down as they sit, not diving like other ducks; they remain down a long while and will come to the surface a long way off, quietly appearing to rise up in the same manner as they sunk out of sight; and they will sink again immediately if they see anything suspicious. The female is of a sober mottled brown color.

18. **Ardea herodias** *Linn.* LARGE HERON; CRABIER MONTAIGNE. — This bird is not a resident; seldom more than one is seen at a time, though in October, 1896, after heavy rains and strong south winds, I saw eight of them in Harvey Vale pasture, which was then covered with water. They appeared to be young birds and to have alighted here owing to the stormy weather, as they had disappeared on the next day when the weather was clear. I shot a fine specimen at Frigate Island in May.

19. **Ardea candidissima** *Gmel.* WHITE GAULIN. — This bird is not common in Carriacou. I have observed but a few of them, and have not, of course, succeeded in procuring their eggs.

'White' Gaulins are numerous at certain seasons, but they are the young of the Blue Gaulin.

20. **Ardea cærulea** *Linn.* BLUE GAULIN. — A common bird wherever swamps or rain pools occur. They nest on the small islets; several nests are occasionally placed on the same tree. The nest is only a platform of dry sticks, through which the eggs can be seen from below. Their eggs are two and sometimes three or four in number, of a beautiful bluish green, and measure 1.66 × 1.32.

The young are pure white, and attain full size before the change of plumage takes place; then they may be observed in all stages of the transition, from a few blue feathers to a few white, until the pure blue slate of the adult is reached.

21. **Ardea virescens** *Linn.* HYALLEE; LITTLE CRABIER.— Numerous about the swamps. It is a prettily marked bird, and the deep orange color of the legs makes it conspicuous as it takes wing on being flushed.

Nest, a few dry sticks, in which are laid two blue-green eggs, measuring 1.42 × 1.10 to 1.32 × 1.02.

22. **Nycticorax violaceus** (*Linn.*). CRABIER; NIGHT HERON.— This bird is numerous in Carriacou; bold and fearless, he is found all round the coast, and at night its loud *quok* is rather startling to the timid traveler.

It nests in the mangroves, laying three blue-green eggs, measuring 2.10 × 1.48 to 2.12 × 1.50.

23. **Porzana carolina** (*Linn.*). SORA RAIL.— This bird is a migrant, but a straggler or two may remain during the year. It is a lively little bird, generally found on the borders of the ponds and rain pools; its habit of flicking up its tail attracts attention to it.

24. **Ionornis martinica** (*Linn.*). PURPLE GALLINULE; HASCAMIOL.— Very numerous at Isle-de-large and Saline Island; a few seen about the ponds at Carriacou. They are caught in fish-pots baited with corn, and also by dogs. They are smartly colored birds, their purple, green and brown plumage, red bill and bright yellow legs, making them conspicuous. They do damage to the Indian corn, as they climb up the stalks and eat the ears; they also climb and eat plantains and bananas.

25. **Gallinula galeata** (*Licht.*). RED-HEAD WATERFOWL.— The large extent of mangrove swamps in Carriacou, the natural home of this bird, makes it very abundant; its note may be heard from morn to eve as one rides along the road between Lauriston and Hillsborough. On entering the swamp numbers may be seen, some with a brood of six or eight chicks swimming behind her; they all make for cover amongst the roots of the mangroves at the least alarm.

The bright red frontal shield of this bird, and the white feathers under the tail, which it keeps flicking up whilst it swims, are conspicuous.

The eggs, from 4 to 6 in number, are light buff splashed with brown.

26. **Fulica americana** *Gmel.* COOT; WHITE-HEAD WATER-FOWL.— This bird is excessively shy, and will dive on the least alarm, and continue diving until security is reached in the rushes or roots on the borders of the swamps, which are its home. I have seen as many as fifty of these birds in Lauriston swamp during the dry season, when only a small quantity of water remains in the deepest pool; here they congregate and may be shot in numbers, by creeping to the borders before sunrise. As a rule they dive at the report of the gun, but many will skim along the surface of the water leaving a wake behind, and occasionally one will rise on the wing. They build a thick nest of water weeds, the bottom often resting on the water; the eggs number from six to eight.

27. **Gallinago delicata** (*Ord*). WILSON'S SNIPE.— Rare migrant, seen during September and October.

28. **Micropalama himantopus** (*Bonap.*). STILT SANDPIPER.— A few arrive during migration.

29. **Tringa maculata** *Vieill.* PECTORAL SANDPIPER; GRASS BIRD.— Arrive in considerable numbers at the end of September and during October; they frequent the pastures, become very fat, and are excellent eating.

30. **Tringa minutilla** *Vieill.* LEAST SANDPIPER. — A few visit the island in September.

31. **Tringa ferruginea** *Brünn.* CURLEW SANDPIPER. — Small numbers arrive in September and October.

32. **Ereunetes pusillus** (*Linn.*). SEMIPALMATED SANDPIPER. — Large numbers arrive from August to October; frequent the mud flats and sea-shore; stragglers may be seen up to May.

33. **Calidris arenaria** (*Linn.*). SANDERLING. — A few visit the island during migration.

34. **Limosa fedoa** (*Linn.*). MARBLED GODWIT. — A rare migrant; one or two arrive with the first flight of Yellow-legs.

35. **Totanus melanoleucus** (*Gmel.*). LARGE YELLOW-LEGS; PIKER. — Large flocks arrive in September and October; they afford good sport, and are relished at the table.

36. **Totanus flavipes** (*Gmel.*). SMALL YELLOW-LEGS. — Large numbers at usual migration season; stragglers may be seen all the year through.

37. **Symphemia semipalmata** (*Gmel.*). WILLET. — An occasional visitor during migration.

38. **Bartramia longicauda** (*Bechst.*). COTTON-TREE PLOVER. — Small numbers arrive during September and October; they are very shy, and run along the ground very fast; they afford good sport and are excellent for the table.

39. **Actitis macularia** (*Linn.*). SPOTTED SANDPIPER. — Arrive from August to October; a few stragglers remain all the year round; frequent the sea shore, and mud pools.

40. **Numenius hudsonicus** *Lath.* LARGE CURLEW. — A few of these visit the island during migration; have shot them at Grand Anse swamp.

41. **Numenius borealis** (*Forst.*). CURLEW. — Comes in with the Plovers, but remains for only a few days.

24. **Charadrius squatarola** (*Linn.*). GRAY PLOVER. — Small numbers arrive in September and October.

43. **Charadrius dominicus** *Müll.* GOLDEN PLOVER. — Large numbers of this game bird used to visit the island, but now that the pastures are being neglected and allowed to be overgrown with accacia, they are becoming fewer every year, and will probably cease to alight here in future. They afford fine sport, and after a few weeks become very fat and are considered a great delicacy.

44. **Ægialitis vocifera** (*Linn.*). KILLDEER PLOVER. — A rare migrant, seldom more than one seen.

45. **Ægialitis semipalmata** (*Bonap.*). RING-NECK PLOVER. — This pretty little bird arrives in August and September; it frequents the sand-beach in flocks of three to six, and runs along at considerable speed, uttering its plaintive call note.

46. **Arenaria interpres** (*Linn.*). TURNSTONE. — Numbers arrive at the migration season; they frequent the seashore, and may be found amongst the débris cast up by the sea. A few remain all the year. I have seen them on the sands of Dumfries and Belvue South at all seasons, and also on the mud flats at Grand Anse. I observed one at the lagoon perched on the mangrove roots eating small oysters.

(*To be concluded.*)

NOTES ON THE SPECIALIZED USE OF THE BASTARD WING.

BY WM. HUBBELL FISHER.

Plate VIII.

IN A book entitled 'The Structure and Life of Birds,' by F. M. Headley, M. A., F. Z. S., published by Macmillan & Co., London and New York, 1895, the author states that he saw a pigeon "when checking his speed in air, lift the bastard wing so that daylight was visible between it and the long feathers, this petty appendage jutting out and impudently spoiling the beautiful line of the front margin of the wing from tip to tip." He further says that "this curious phenomenon may be seen if you stand at the British Museum (the Antiquarian Department at Bloomsbury), as the pigeons which are usually feeding in large numbers in the front fly up and settle overhead on the pediment." He adds that "in Muybridge's photographs of the Cockatoo, on the wing, both bastard wings may be seen to be slightly raised, for what purpose it is hard to say. In the pigeon, they project during a vigorous stroke, but I have seen no other bird use them either for stopping or striking." On page 254 of his work, figure 65, Mr. Headley

FIG. 1. PIGEON SHOWING BASTARD WING IN FLIGHT.

FIG. 2. STORK SHOWING BASTARD WING IN FLIGHT.

furnishes a drawing from a photograph of Ottomar Anschutz, showing the bastard wing extending during a down stroke.

While in Europe last summer, at Munich, I procured a number of instantaneous photographs of pigeons in flight, and also a number of instantaneous photographs of storks (*Ciconia alba*) in flight. All of these were taken by Ottomar Anschutz. One of these photographs of pigeons shows a bird descending. This photograph appears to be a different one from that which is proffered by Mr. Headley, but the pigeon clearly shows the bastard wing raised and projecting forward. The pigeon is evidently about to alight on what appears to be a box, and is checking his flight either by his outstretched wings held rigidly, or the wings are used to back air, as an oarsman backs water. From my observations of pigeons, in alighting, I am of the opinion that the bird is no doubt bringing his wings rapidly forward at the moment when photographed, as he is too near the perch to deem it likely that he was using the soaring position. I here submit the figure. (Plate VIII, Fig. 1.)

Among the photographs of the stork which I procured, was one of a stork descending to its nest. In this (Plate VIII, Fig. 2) the stork's wings are extended and spread to their full capacity.

One interesting feature of the picture is the bastard wings, each of which is extended forward away from the rest of the wing and spread to the full extent of its capacity. I am not positive whether the wings were in motion when this photograph was taken, or whether the wings were being held stationary. That the wing is not being raised is evident, because the tips of the primary feathers are bent backward. It is very interesting to note that in at least two different orders of birds, namely: Columbæ and Herodiones (and Psittaci?), we find pronounced and emphatic use of the bastard wing, and in the same or allied phases of flight, namely: in that or those which belong to the descent, and at that part of the descent when the bird is very near the place upon which it is to alight.

PLUMAGE-CYCLES AND THE RELATION BETWEEN PLUMAGES AND MOULTS.

BY JONATHAN DWIGHT JR., M.D.

THE plumage-cycle of a species is the series of successive plumages that are peculiar to the species, or it may be said that the several plumages of the young bird together with those of the adult, make up a plumage-cycle. If plumages are viewed in the natural sequence in which they succeed one another, it will be found that plumage-cycles of species vary in many details difficult to put into words, for with broadening knowledge of the subject we find that many familiar terms are inadequate. They have lost definiteness of meaning through careless use, or they have outgrown their early significance or they have been paraphrased into a host of synonyms, in any or all of these ways occasioning much confusion of ideas. Ornithology seems to be lagging behind other branches of zoölogy in the slow movement towards exactness of statement and of language, and many of the vague ideas that prevail regarding the relation of plumage to moult need to be reduced to exact terms. Some steps have already been taken in this direction, and perhaps many more need to be taken before we shall reach a firm foundation on which to build an adequate system of plumages and moults, but it seems to me the time has arrived when the prominent facts admit of a more accurate grouping than has hitherto been attempted.

Most of us are so committed to the old idea of seasonal plumages and seasonal periods of moult, that it is in the nature of a shock to realize that the seasonal idea fits neither birds of the tropics nor those of temperate regions. We are accustomed to think of the 'summer' and 'winter' dress of birds as if they all changed their feathers twice in the year. While these adjectives of season may apply to birds that actually do moult twice in the year, we are at present without a suitable word to express the plumage of birds that, wearing the same dress throughout the year, moult only once. Nor is it safe, if we wish to be accurate, to speak as we do of 'spring' and 'fall' moults, because the moulting periods vary so with species and with age that no

seasonal line may be drawn, even in countries that have springs and falls. Then again it has been customary to class as 'immature' several different stages of plumage now too well understood to permit of such lax classification. The fact is, plumages and moults have outgrown their nomenclature, as the various terms of writers clearly indicate, and while I have been in good company in sticking to the seasonal idea, I have long felt that we must come to a wider view.

We may not all agree as to what constitutes a plumage and what a moult, but we know that plumage is made up of successive generations or crops of feathers that, with the exception of the first, grow at periods of moult, and that the feathers remain, even though sadly altered by wear, until the next moult. A complete moult can only result in a simple plumage, all the feathers of the generation being of about the same age, but if the moult be partial the resulting plumage will be compound and made up of new feathers more or less mixed, according to circumstances, with those of an earlier generation. Now, it seems to me, there are three great and distinct epochs of plumage in the life-cycle of the bird corresponding in a measure to infancy, youth and manhood in the human being, and three adjectives are applicable to them, viz. natal (Lat. *natalis*), juvenal (Lat. *juvenalis*), and nuptial (Lat. *nuptialis*). The natal plumage consists of the down-like feathers of the first generation known as neossoptiles, the juvenal plumage consists of feathers of the second generation, and the nuptial includes the later generations. But as a matter of fact such simplicity of plumages is rarely found; the natal plumage may be lacking, the juvenal is worn wholly or in part as a first nuptial, and the nuptial is supplemented by non-nuptial and protective stages.

From time immemorial, the adult plumage of the breeding season has been accepted as the one most typical of the species, and the moult by which it is entirely swept away forms a fixed point in every plumage-cycle. The plumage may well be called the nuptial and the moult the postnuptial. Some species at the postnuptial moult acquire an annual plumage lasting through the whole year until the next postnuptial period; other species acquire a distinctly non-nuptial plumage which, at the prenuptial moult prior

to the breeding season, becomes a true nuptial plumage, simple or compound according as the moult is complete or incomplete. It is therefore obvious that there are three plumages belonging especially to adult birds, instead of the two usually recognized if adherence be given to the seasonal idea. The three are the annual (possibly *annuo-nuptial* would express it better), the nuptial and the non-nuptial. As for the special protective plumages of the Ducks and Ptarmigans, they might be called tutelar (Lat. *tutelaris*), and they seem to be the result of a complete postnuptial moult, on the heels of which follows so quickly the always incomplete posttutelar, that the latter seems to be a continuation of the former. The Ducks, however, pass most of the year in the compound annual plumage, resulting from the two moults, while the Ptarmigans on the other hand acquire a compound non-nuptial dress that is further compounded for the breeding season by a prenuptial moult lacking in the Ducks. These then are the plumages and moults peculiar to birds in their second or later years, that is after the first postnuptial moult, and it will now be easier to understand those of the young bird that at each successive moult approaches more nearly to the ultimate adult plumage.

The first plumage of the young bird is the natal, a name applicable to the rudimentary feathers of the first generation known as neossoptiles or neoptiles. The Megapodiidæ are said to lose this plumage before the bird leaves the egg, while its growth both before and after hatching may be observed in many familiar species. Most water birds, like the Pygopodes, the Anatidæ or the Limicolæ, and among land birds the Gallinæ, are thickly covered with this down-like plumage, while its scantiness is marked in most land birds like the Passeres or Columbæ. In some families like the Picidæ or Trochilidæ it is absent. At most, the natal plumage is worn for only a brief period and is completely lost by what may be considered as a postnatal moult, although this consists chiefly of loss by abrasion of the neossoptiles from the tips of the succeeding feathers to which they are attached. There is no cessation of feather growth as after an ordinary moult, but the calamus of the neossoptile is continued into the tip of the definitive feather or teleoptile which follows. There is, however, feather loss of the first generation and feather gain of the second, the two essential constituents of a moult.

The second plumage of a young bird may be appropriately called the juvenal rather than 'juvenile,' which word has a less exact meaning, like other terms that have been in use for this plumage. The current expression 'first plumage' is entirely inappropriate for a distinctly second stage or second generation of feathers. These have been called 'mesoptiles' to distinguish them from other teleoptiles but the distinction is often not very obvious, although some of them in some species and all of them in others are weaker and softer in structure than adult feathers, and also lack, as a rule, the adult patterns and colors. The order of their growth, the types of feathers, and the areas covered, need not concern us in the present connection, although it is important to note that the remiges of the juvenal dress of land birds like the Passeres or Gallinæ, grow in advance of the body plumage, while water-birds like the Pygopodes or Anatidæ acquire most of the body plumage first. Among many of the smaller species of birds the juvenal plumage is discarded within a few weeks. There are many other species, however, both large and small that retain at least a portion of it, usually the wings and tail, for an entire year.

The postjuvenal moult is an extremely important point in every plumage-cycle and varies both in its completeness and in the time of its occurrence, even among closely related species. It has often been confused with the prenuptial moult which in some species and in some individuals it overlaps in point of time. In fact, we often find this moult so long drawn out, that in some species having also a prenuptial moult, both moults may be found in progress on the same specimen, as may be seen among some of the Longipennes, Anatidæ and Passeres. But irrespective of time of occurrence and extent of feather areas involved, two plumages result from a postjuvenal moult, the first annual (juveno-annual) or the first non-nuptial (juveno-non-nuptial) either of which may be simple or compound as the moult is complete or incomplete. The simple first annual plumage is illustrated by the English Sparrow (*Passer domesticus*), the compound by the American Robin (*Merula migratoria*), the simple non-nuptial plumage by the Horned Lark (*Otocoris alpestris*), the compound by the Black Guillemot (*Cepphus grylle*), and there are many species in many families of birds that follow one or the other of these types

of moult. The first annual (a simple or compound juveno-annual) plumage is retained until the first postnuptial moult, but the non-nuptial may be either obliterated by a complete prenuptial moult or more frequently further compounded by the new feathers of a partial renewal. The first non-nuptial therefore is succeeded by a simple first nuptial (juveno-nuptial) as seems to be the case with the Sterninæ, the Bobolink (*Dolichonyx oryzivorus*) and other Passeres, or a compound first nuptial as seen in many widely differing species like the Lapland Longspur (*Calcarius lapponicus*), Bonaparte's Gull (*Larus philadelphia*) or Ruddy Duck (*Erismatura jamaicensis*). This last plumage is perhaps the commonest of the 'immature' plumages, and they are not difficult to understand if we learn their origin. Fortunately for the student most of them are replaced, not later than the first postnuptial moult by the adult or very nearly adult plumage. Some of the larger Longipennes, Anatidæ and others pass a second year in an 'immature' plumage wholly new at the first postnuptial moult, but their relative numbers are so small that in some species it is possible they represent birds of deficient vitality, a portion at least seeming to assume adult dress, at a considerably earlier period than is generally supposed.

Much of what I have written will, no doubt, seem obscure and complicated, for the facts about plumages and moults do not readily lend themselves to simple explanation, but in summing up the following systematic arrangement of plumages and moults may perhaps help to make the whole subject clearer.

DERIVATION OF PLUMAGES.

Natal.	Natal.
Postnatal moult, complete.	
Juvenal.	Juvenal.
Postjuvenal moult, if complete.	
Annual (simple).	1st Annual or simple juveno-annual.
Non-nuptial (simple).	1st Non-nuptial or simple juveno-non-nuptial.
Postjuvenal moult, if partial.	
Annual (compound).	1st Annual or compound juveno-annual.

[*Lagopus* assumes a special protective plumage and by *posttutelar moult* a compound non-nuptial plumage.]	1st Protective or juveno-tutelar.
Non-nuptial (compound).	1st Non-nuptial or compound juveno-non-nuptial.
Prenuptial moult, if complete.	1st Nuptial or simple juveno-nuptial.
Prenuptial moult, if partial.	1st Nuptial or compound juveno-nuptial.
Nuptial.	
Postnuptial moult complete.	
Annual (simple).	2d or adult Annual or simple annuo-nuptial.
[Some Anatidæ assume a special protective plumage and by *posttutelar moult* a compound annual plumage.]	2d or adult protective or tutelar.
Non-nuptial (simple)	2d or adult Non-nuptial.
Prenuptial moult if complete.	2d or simple adult Nuptial.
Prenuptial moult, if partial.	2d or compound adult Nuptial.

According to this arrangement of plumages, the old indefinite terms are replaced by exact ones, and instead of 'downy young' we have *natal,* instead of 'first (!)' or 'nestling plumage' we have *juvenal,* and instead of 'autumnal,' 'winter,' 'non-breeding,' 'nuptial' or 'immature' plumages we have the several *annual* or *nuptial* plumages exactly indicated. It is therefore possible to represent the plumage-cycle of a species with considerable accuracy, the following being a few examples.

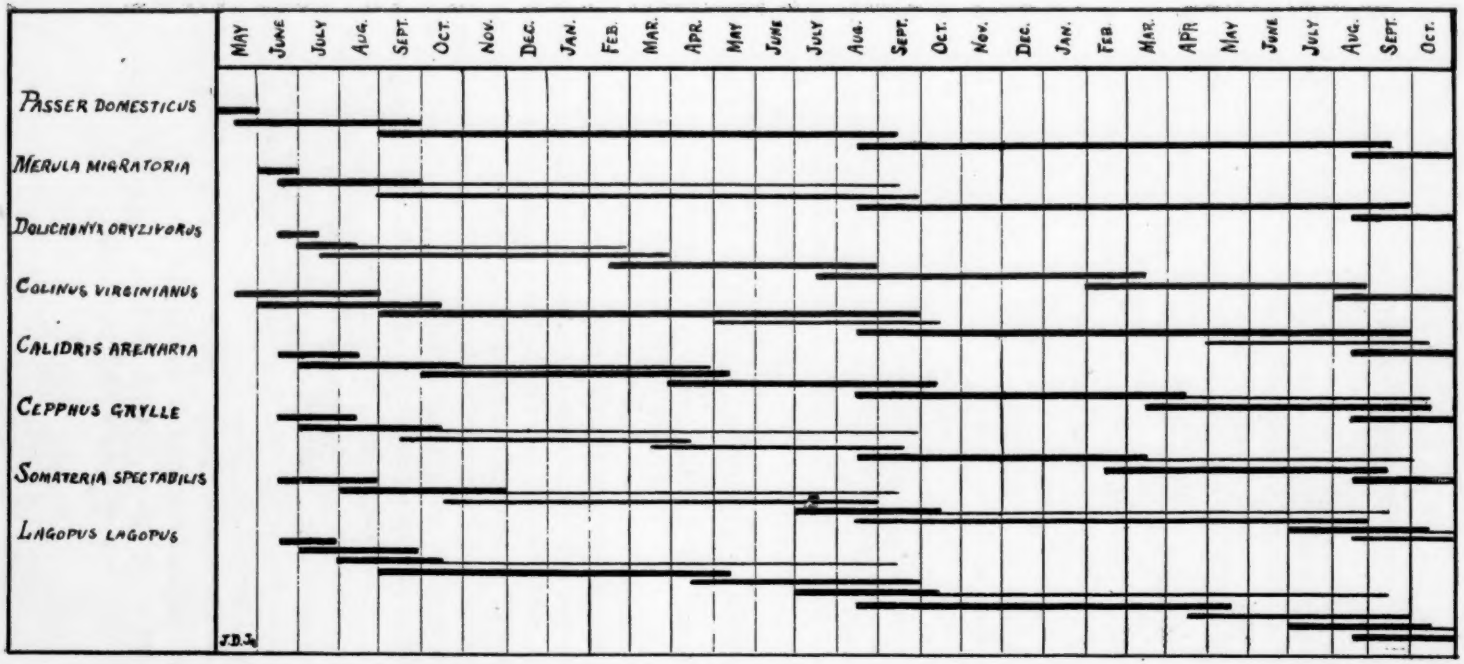
Passer domesticus. Natal, juvenal, simple annual.

Merula migratoria. Natal, juvenal, compound annual.

Carpodacus purpureus. Natal, juvenal, compound first annual, simple adult annual.

Colinus virginianus. Natal, juvenal, simple first non-nuptial, compound nuptial, simple adult non-nuptial.

Dolichonyx oryzivorus. Natal, juvenal, compound first non-nuptial, simple nuptial, simple adult non-nuptial.



A GRAPHIC METHOD OF REPRESENTING PLUMAGES AND MOULTS.

Each line represents a plumage, its beginning, the beginning of the moult by which the plumage is acquired, its end, the end of the moult by which it is lost.

Calidris arenaria. Natal, juvenal, compound first non-nuptial, simple first nuptial, simple second non-nuptial, compound adult nuptial.

Cepphus grylle. Natal, juvenal, compound first non-nuptial, compound nuptial, simple adult non-nuptial.

Somateria spectabilis. Natal, juvenal, compound annual, protective (or tutelar.)

Lagopus lagopus. Natal, juvenal, first protective, compound non-nuptial, compound nuptial, adult protective.

Finally I have prepared a table (p. 254) showing by the graphic method, the plumage-cycles of several species, which differ in the number of plumages worn in equal lengths of time. I have represented the average length of time each plumage is worn and the average time of the beginning of the moults but individuals delayed in moult or deficient in vitality will vary much from the average. To-day the average is none too well known even among the commonest species.

ON THE FINDING OF THE BONES OF THE GREAT AUK (*PLAUTUS IMPENNIS*) IN FLORIDA.

BY O. P. HAY.

ABOUT the beginning of the present year the writer received, for identification, from Prof. W. S. Blatchley, State Geologist of Indiana, a small collection of bones which he had made from an Indian shell heap at Ormond, Florida. In looking over this lot of bones, which in general are those of species living to-day in that region, attention was attracted by a strongly flattened bird humerus. It soon became evident that it belonged to some member of the Alcidæ, but was larger than the humerus of any species now living along our coast. On the suggestion of Mr. F. M. Chapman, it was compared with humeri of the Great Auk which had been collected by Prof. F. A. Lucas on Funk Island, and the comparison showed that it agreed with those in every particular. This result

was so surprising that careful inquiry was made of Prof. Blatchley to ascertain the possibility of an intrusion of the bone from some other collection. Assurances were received from that gentleman that he had collected the bone himself at the locality mentioned. Shortly after this an account of the discovery was published in the New York 'Sun'; and this being copied into some of the Florida papers, reached the eyes of Prof. C. H. Hitchcock of Dartmouth College, who was then sojourning at Ormond. He wrote at once making inquiry as to the position of the mound. At the same time I was anxiously looking for some one to continue excavation with a view of finding other bones of this interesting bird; hence the information was at once furnished. Prof. Hitchcock immediately went to work and it was not long before he reported the finding of another humerus. On his return north he stopped at Washington, where he showed the bone to Prof. F. A. Lucas, of the National Museum. Afterward this bone and specimens of the other vertebrates that he had collected at Ormond were turned over to the writer by Prof. Hitchcock for identification.

According to Prof. Blatchley's account, this shell heap is situated on the west bank of the Halifax River, about one mile north of Ormond. The mound was originally 1136 feet long, 213 feet wide where widest, and about ten feet high where highest. A portion of it more than a hundred feet long has been removed for use on the streets of Ormond. The whole is a refuse heap which was made by the Indians, and consists of shells, bones, pottery, etc. The great bulk of the materials is composed of the shells of the little mollusk, *Donax variabilis*, which is very abundant at this locality, the animal of which appears to have been relished by the aborigines. It seems very plain, however, that they were ready to make use of almost any animal, salt water, fresh water, or terrestrial.

Where Prof. Blatchley's excavations were made there are six layers of shells, varying from five inches to three feet in thickness, and five of mold or decaying vegetation, ranging in thickness from two inches to a foot. The surface soil is a foot thick, and in this are growing trees of considerable size. These data give us some idea of the great age of at least the older portions of the mound. The bone of the Great Auk secured by Prof. Blatchley was taken

from the lower two-thirds of the heap. Prof. Hitchcock's excavations were made about twenty feet distant from those of Prof. Blatchley, and the bone which he secured was taken at the very bottom of the heap and beneath eight feet of shells. It many be added that the two humeri belong to the same side, the left.

Much has been written about the distribution of the Great Auk. Its existence on the coast of New England since the time of occupation by white men appears to have been held in some doubt. Prof. F. W. Putnam (Amer. Naturalist, III, 1869, p. 540) informs us that its bones have been found in great numbers in the shell heaps of Massachusetts as far south as Marblehead, Ipswich, and Plum Island. He also presents some evidence to show that it had occurred at Ipswich within perhaps a hundred years. Orton states (Amer. Naturalist, III, p. 539) that Audubon wrote that it had once been plentiful at Nahant. Alfred Newton, who has made a most careful study of the history of the bird says (Ibis, 1861, p. 397) that in comparatively modern times its range extended to Cape Cod. F. P. Hardy in a very interesting paper (Auk, V, 1888, p. 383) quotes a passage from Archer's 'Account of Gosnold's voyage to Cape Cod' showing that among other birds seen there by these voyagers in the spring and summer of 1602 were "penguins," a name in those times often applied to the Great Auk. Hardy concludes that these birds must have been breeding there at that season. This writer also refers to Brereton's 'Account of the voyage of Gosnold to Virginia,' in which it is stated that "penguins" had been observed in that region. At what season they were seen we cannot perhaps determine.

Mr. Symington Grieve, of Edinburgh, who has written various papers on the Great Auk, has, through Prof. Lucas, called my attention to a passage found in Catesby's 'Natural History of Carolina,' published in 1754. The passage is found in the appendix to the second volume, p. xxxvi. Catesby gives there various lists of animals observed by him. One of these lists is entitled "European water-fowls which I have observed to be also inhabitants of America, which tho' they abide the winter in Carolina, most of them return north in the spring to breed." In this list occurs again the name "penguin." Although no considerable importance has hitherto been attached to these statements regard-

ing the great southward range of the Great Auk, statements not corroborated and apparently rather improbable; nevertheless, in the light of the discovery of the bones of this bird in Florida, they seem to gain considerable claim to respect.

That the Great Auk was a permanent resident in Florida is very doubtful. We can hardly argue with respect to the shell heaps of Florida, as Hardy has maintained in the case of the New England heaps, that they were built up during the summer, and that hence the bones are those of auks which were captured at that season. On the other hand, Ormond is a thousand miles distant in a straight line from Cape Cod, and eighteen hundred from Newfoundland; and either of these distances would be a long trip for a wingless bird to make and repeat in half a year, even though his swimming powers were very great.

We shall probably yet learn that the Great Auk was a permanent resident along our coast considerably further south than Cape Cod. For the further elucidation of this subject, search ought to be made in shell heaps all along the coast. Additional information may possibly be obtained from the early writers on the history, civil and natural, of our country.

THE BIRDS OF MARGARITA ISLAND, VENEZUELA.

BY AUSTIN H. CLARK.

THE observations, from which this list is compiled, were taken during a stay on the island of a little over three weeks, from July 2 to July 25, 1901. Specimens were obtained of all the land birds seen except the two Vultures, the Amazonian Parrot, and the South American Nighthawk. Although the conditions in the main agree with those reported by Capt. Wirt Robinson (Proc. U. S. Nat. Mus., Vol. XVIII, pp. 649–685) still there are some important differences, both in the distribution of species, and in the occurrence of forms not found by him.

This season (1901) was exceptionally dry, the rains having to

a great extent failed, which may in a measure account for some of the differences in distribution, as in the case of the Crested Quail (*Eupsychortyx*) and the Cardinal (*Cardinalis*).

The island of Margarita lies off the Venezuelan coast, directly north of Cumaná, from which it is distant about twenty miles. It is forty-two miles long, and is made up of two parts, each with a high central peak, connected by a narrow neck. The eastern part is the larger and contains all the principal towns; the western is practically barren.

The island has three well defined life zones; first, the flat and hot coast region, sandy, and with scant vegetation, consisting of post and melon cacti, with the dreaded 'tuna' and thorn-trees. This extends all around the island, and occupies a strip averaging about three miles in width, in which the Burrowing Owl (*Speotyto*) is exclusively found, while the Troupial (*Icterus*), Scaled Dove (*Scardafella*), Buzzard (*Buteo*), and Parrakeet (*Conurus*) prefer it to any other region. The chief towns of the island, Asunción, Juangriego, and Porlamar, are situated here. Next comes the intermediate region, of rough, hilly country, with a large amount of scrubby growth, and many varieties of cactus, forming the home of the Tawny Cuckoo (*Diplopterus*), the Spinetail (*Synallaxis*), and the Honey Creeper (*Cœreba*). The interior of the eastern part of the island is a heavily wooded mountain, with its summit 3240 feet above the sea level, and always hidden by clouds. Here occur such forms as the Yellow-billed Thrush (*Platycichla*), Manakin (*Chiroxiphia*, Guan (*Ortalis*) and Parrot (*Amazona*).

Some birds, such as the Creeper (*Dendroplex*) and the Ant-shrike (*Thamnophilus*), occur everywhere.

Several streams flow down the mountain and one, the most important, attains a considerable size in the rainy season, flowing from high up on the mountain to the sea which it meets a little east of Porlamar. In the valley of this stream, at the base of the mountain, is situated the little town of El Valle, in a large grove of cocoanut palms. It was in this village that most of the work was done, as it was a good place in which to live, and was within easy reach of the mountain forest, and of the hot coast plain.

1. **Larus atricilla** *Linn.* LAUGHING GULL. — Common along the beaches of the island and of the adjacent mainland.

2. **Rynchops nigra** *Linn.* BLACK SKIMMER. — A few seen, out in the channel between the island and the main land.

3. **Oceanites oceanicus** (*Kuhl*). WILSON'S PETREL. — On July 2 a flock of about two dozen of these birds came about the boat in which I was crossing over from the mainland. They appeared about sunset, and approached very near, within a few feet of the stern.

4. **Phalacrocorax** sp. CORMORANT. — I found a small, dark-colored cormorant common at Margarita, and abundant about Carúpano, on the mainland, occurring either singly or in small companies just outside the surf. In the harbor at Carúpano they were especially common, and very tame, coming up to within a few yards of the wharves. They never mingled with the great flocks of other sea birds, but always kept by themselves.

5. **Sula** sp. GANNET. — Midway between the mainland and the island a few small white gannets, probably *Sula piscator* Vieillot, appeared.

6. **Sula** sp. BOOBY. — Abundant all along the coast from LaGuaira to Trinidad, but especially so in the channel between Margarita and the mainland. Here they were to be met with at all times, flying about in small companies, or sitting on the water. In flying they alternately flap and sail, a whole flock acting in unison, like pelicans. At Carúpano, where they were very common, they would mingle with the large flocks of pelicans, and feed together with them, acting like them in every way. Often a solitary pelican could be seen feeding, attended by one of these gannets, which acted like the larger bird in every way, diving at the same time, and always keeping near it while in the air. This species was doubtless *Sula sula* (Linn.).

7. **Pelecanus fuscus** *Linn.* BROWN PELICAN. — Very common about the island, and along the mainland, especially in and about the harbor of Carúpano. Here they collected by hundreds to fish, accompanied by boobies and frigate birds.

8. **Fregata aquila** (*Linn.*). MAN-O'-WAR BIRD. — Common along the beaches, sailing about high in air. At Carúpano there would be sometimes over fifty in sight at once, but they were not so common at the island. They often wander inland, and may often be seen circling about two or three miles from the sea.

9. **Garzetta candidissima** (*Gmel.*). SNOWY HERON. — Common about the mangrove-bordered lagoons, and on the beaches.

10. **Arenaria interpres** (*Linn.*). TURNSTONE. — Common in large flocks about the lagoons and along the beaches.

11. **Eupsychortyx pallidus** *Rickmond.* MARGARITAN CRESTED QUAIL. — Common along the bases of the hills, and in the scrub on their lower slopes. Although reported by Capt. Robinson as being "abundant in the thorny thickets near the coast," I found none there, although I searched carefully for them. On the lower declivities of the hills, however, their

call, exactly the same as that of our common Bob-white, could be heard at any time.

12. **Ortalis ruficauda** *Jard.* CHACHALACA. — The natives told me that this bird was common on the mountain, but I did not succeed in getting any there, although I found several nests which my guide attributed to this species. They were all about twenty-five or thirty feet from the ground, and were large and bulky. One contained a fresh egg (July 9) which was unfortunately broken in being brought from the nest to the ground.

13. **Leptotila insularis** *Richmond.* MARGARITAN DOVE. — This dove was not rare, although shy and retiring, living on the wooded mountain slopes where it was difficult to approach.

14. **Columbigallina passerina** (*Linn.*). GROUND DOVE. — Abundant everywhere except in the forest. I found several nests of this species constructed in the post-cacti, one containing nearly full grown young (July 17).

15. **Columbigallina rufipennis** (*Bonap.*). RUFOUS GROUND DOVE. — Not very common, occurring mostly on the hill sides about El Valle.

16. **Scardafella ridgwayi** *Richmond.* RIDGWAY'S SCALED DOVE. — Abundant everywhere, except in the forest. In the coast region this was the commonest bird, and could be seen everywhere, running along the ground or perched on some low eminence. When startled their wings emit a peculiar rattle instead of a whistle. About El Valle they were abundant on the barren mountain sides, and in the cocoanut groves. Their cheerful *pó-to-có* was, perhaps, the most characteristic sound on the island, and could be heard at any time coming from some post-cactus, thorn-tree, or other suitable elevation.

17. **Cathartes aura** (*Linn.*). TURKEY VULTURE. — Fairly common about El Valle.

18. **Catharista urubu** (*Vieill.*). BLACK VULTURE. — Abundant, especially about Porlamar and the neighboring beaches.

19. **Buteo albicaudatus** *Vieill.* WHITE-TAILED HAWK. — Fairly common on the hot coast plain west of Porlamar, but rare in the interior. I obtained one specimen, an immature female, and found the remains of an adult nailed to a tree on the mountain side above El Valle. The people at El Valle told me that it was rare there, and when I brought one home, every one came over to have a look at it. This buzzard behaves much like our common Red-tail, but is less shy.

20. **Falco sparverius** *Linn.* SPARROW HAWK. — Although I searched carefully, I saw none of these birds, but a man who had been out hunting quail brought one in which he had shot in an open field near the house. Capt. Robinson records the bird as "abundant" (in 1895).

21. **Gampsonyx swainsoni** *Vigors.* PEARL KITE. — This pretty little kite was very common about El Valle. My first example was shot from an inaccessible nest in the topmost branches of a very tall tree. These birds could be seen almost any time perched on some bare twig on the

lookout for food, or sailing over the cocoanut groves. The stomachs of almost all contained the remains of lizards.

This bird appears to have in some way changed places with the preceding. Although in 1895 Capt. Robinson found the Sparrow Hawk abundant, he did not secure a single specimen of the Pearl Kite: while in the past summer (1901) the Kite was almost abundant, and the other was very rare.

22. **Megascops brasilianus** (*Gmel.*). BRAZILIAN SCREECH OWL. — An immature owl of this species was brought to me by a boy who lived high up on the mountain side.

23. **Speotyto brachyptera** *Richmond.* SHORT-WINGED BURROWING OWL. — These owls were fairly common on the hot coast plain wherever the vegetation was scantier than usual. Near a large shallow lagoon, where there was practically no plant life, there was a colony of them. They are unsuspicious birds, and may be approached very closely before taking wing. They fly but a short distance, alighting with a series of bounds, as if their legs were supplied with springs.

24. **Glaucidium phalænoides** (*Daud.*). FERRUGINOUS PYGMY OWL. — Only one specimen was secured.

25. **Conurus æruginosus** (*Linn.*). RUSTY PARRAKEET. — Very common in the flat coast region, and also in the cassava fields on the mountain sides. On the coast by Porlamar, where it was much more abundant than anywhere else, its loud screeching could be heard on all sides as the flocks flew about searching for food. When in the trees, however, they were very quiet; a whole flock would seem to disappear on alighting, every member becoming instantly still, and, for a time, motionless; but, on being startled, the whole flock would screech louder than ever, and fly swiftly away.

While in Porlamar I noticed many flocks of these birds flying very high in air over the town, toward the mainland. As none were seen to fly back again, I judged it to be a migration. Possibly the birds resorted to the island to breed, and were now leaving, as the breeding season was about over.

This bird is very popular as a pet, but not so much so as is the following species. I saw one belonging to a friend in Trinidad which would imitate any word or short sentence said to it, immediately, even copying emphatic noddings of the head.

All the wild parrakeets were in wretched plumage.

26. **Amazona amazonica** (*Linn.*). AMAZONIAN PARROT. — Occurs in the forest in flocks of various sizes. It is a very noisy bird, but on the approach of a hunter becomes quiet, until its limit of endurance is reached, when it flies screeching off over the tree tops. It is a very popular cage bird with the natives, who call it 'Loro' from its cry.

27. **Crotophaga ani** *Linn.* ANI. — Common in small companies, rarely over a dozen or fourteen, in and about cocoanut groves, and in open places.

28. **Diplopterus nævius** (*Linn.*). TAWNY CUCKOO. Not very common; I only found it in the thickets on a hillside east of El Valle.

29. **Bucco bicinctus** (*Gould*). TWO-BANDED PUFF-BIRD. — Common about El Valle, especially about the ravines and dry water courses. It is very unsuspicious, and the boys of the village killed two or three for me with stones.

30. **Melanerpes subelegans** (*Bonap.*). BONAPARTE'S WOODPECKER. — Abundant everywhere, except in the thick forest. They have a harsh rattling cry, unlike that of any other bird on the island.

31. **Stenopsis cayennensis** *Gmel.* CAYENNE GOATSUCKER. — One specimen secured on the coast west of Porlamar, and two others seen the same day. This species was not found by Capt. Robinson.

32. **Chordeiles acutipennis** (*Bodd.*). SOUTH AMERICAN NIGHTHAWK. — A few seen at dusk about the streets of Porlamar, and also at El Valle.

33. **Doleromya pallida** *Richmond.* BUFF-BREASTED HUMMINGBIRD. — This species was described in 'The Auk' (Vol. XII, p. 369, 1895) by Dr. C. W. Richmond who separated it from *D. fallax* on account of its being much paler below, and having the "metallic green of the upper parts less brilliant and less brassy." The nineteen specimens collected by Capt. Robinson (1895) were all uniformly paler than the specimens of the *D. fallax* with which they were compared, and could readily be distinguished. In the summer of 1900, Capt. Robinson secured at San Julián, near La Guaira, an example of true *D. fallax*, which is interesting as being in the same condition of plumage as those taken on Margarita, whereas the specimens of *D. fallax* with which the Margaritan examples had been previously compared were in fresh condition. The characters given for the Margaritan form hold good, and "*pallida* can readily be distinguished from *fallax*" (Proc. U. S. Nat. Mus., Vol. XXIV, p. 172, 1901).

This bird is common, except in the forest. It is very noisy, especially just before sundown, and may readily be located by tracing up its song, when it will be found perched upon some bare twig or other suitable eminence.

34. **Amazilia aliciæ** *Richmond.* ALICE'S HUMMINGBIRD. — Abundant on the higher parts of the mountain, becoming less common toward the foot. About El Valle they were rather rare, while I saw none at all nearer the sea.

35. **Chlorostilbon caribbæa** *Lawr.* ATALA'S EMERALD. — Common about El Valle and on the lower slopes of the mountain.

36. **Chiroxiphia lanceolata** (*Wagler*). LANCE-TAILED MANAKIN. — Common in the forest on the mountain. Although it is difficult to procure specimens by following them through the thick undergrowth, they are, especially the females, readily attracted by imitating the call-note.

37. **Tyrannus dominicensis** (*Gmel.*). GRAY KINGBIRD. — Fairly common except on the mountain.

38. **Tyrannus melancholius satrapa** (*Licht.*). CROWNED KINGBIRD. — Occurs about El Valle.

39. **Myiarchus tyrannulus** (*Müller*). BLACK-BILLED PETCHARY.— Common everywhere on the island.

40. **Sublegatus arenarum** (*Salvin*). VENEZUELAN FLYCATCHER.— Common, except in the mountains. Two specimens from the island have wing measurements 65 mm. for a ♀, and 66 mm. for a ♂. Six specimens from Panama have the following measurements for the wing: ♀ 71 mm., ♂ 70, 69, 72, 73, 71 mm. The tail measurements of both the Panama and Margaritan examples are identical, and the color is the same.

41. **Thamnophilus doliatus** (*Linn.*). BARRED ANT SHRIKE.— Common at all points on the island. One of its notes is much like the caw of our common Crow (*Corvus americanus*).

42. **Formicivora intermedia** (*Cab.*). INTERMEDIATE ANT WREN.— Common about El Valle, and along the bases of the hills, in the scrub.

43. **Dendroplex longirostris** *Richmond.* MARGARITAN CREEPER.— Abundant at all points on the island. They are oftenest found, however, about the post-cactus. Their cry is much like that of the Belted Kingfisher (*Ceryle alcyon*) but harsher, and more grating.

44. **Synallaxis albescens nesiotis**[1] new subspecies.

MARGARITAN SPINE-TAIL.

Common in the scrub about El Valle.

Type.— Male adult; No. 2723, collection of E. A. and O. Bangs.

The underparts can be closely matched by specimens from the mainland, but the upperside is paler and more gray, with the patch on the head, and the wing-coverts of a more yellow shade, serving at once to distinguish it from the true *S. a. albescens.* The greatest difference is seen in the under wing-coverts, which in this form are cream-color, while in *S. a. albescens* they are buff. The under tail-coverts are also paler. The measurements are as follows.

		Wing.	Tail.
		mm.	mm.
Synallaxis albescens nesiotis ♂	Margarita Island.	53	76
" " *albescens* ♂	Colombia . .	58	78
" "	" . . .	58	84
" "	" . . .	56	79
" "	" . . .	55	80
" "	" . . .	57	80

45. **Icterus icterus** (*Linn.*). TROUPIAL.—Abundant in the coast region, common about El Valle, but rare farther up the mountain.

[1] Nesiotis, from νεσιώτης, an islander.

46. **Icterus xanthornus helioeides,**[1] new subspecies.

MARGARITAN ORIOLE.

Type.— Male, adult, No. 2690 collection of E. A. and O. Bangs.

This oriole differs from the mainland form in being larger, with smaller feet, and a thicker, heavier bill, having the culmen more nearly straight than in continental examples. The Margaritan bird is also somewhat brighter in color, and more strongly tinged with orange, while the black patch on the throat is more extensive.

It differs from *I. x. curasöensis* in having the bill shorter, but stouter and less arched, and in being larger, with more black on the throat, and generally brighter in color.

Common everywhere except in the forest, being much more abundant about El Valle than the Troupial. The notes of these two birds are almost identical, except that that of the Troupial is much louder.

Measurements.

		Wing.	Tail.	Exposed culmen.	Tarsus.	Width of bill behind nostril.	Extent of beak on throat.
		mm.	mm.	mm.	mm.	mm.	mm.
I. xanthornus helioeides	♂	101	103	23	24	8	52
"	♂	99	102	22	25	8	55
"	♀	94	99	23	25	8	53
"	♀	92	91	24	24	8	50
"	♀	88	96	22	25	8	52
I. xanthornus curasöensis	♂	94	91	26	27	6	42
"	♀	87	88	25	25	6	—
I. x. xanthornus	♂	88	87	20	26	6½	34
"	♂	94	89	20	27	—	41
"	♂	91	92	21	27	6½	39
"	♂	94	88	21	28	6½	38
"	♂	89	87	21	27	6½	40
"	♂	88	87	20	27	6	37
"	♀	82	81	20	27	7	31

47. **Quiscalus insularis** *Richmond.* MARGARITAN GRACKLE.— Abundant both at Porlamar and at El Valle, in the yards of houses and in cocoanut groves.

48. **Cardinalis robinsoni** *Richmond.* ROBINSON'S CARDINAL.— Not common: I saw perhaps a dozen around El Valle, and saw none at all in the coast region. Capt. Robinson found this bird "common in the coast region."

[1] From ἡλιοειδής, bright.

49. **Euetheia bicolor omissa** (*Jard.*). CARIBBÆAN GRASSQUIT. — Common about El Valle and on the coast.

50. **Tachyphonus melaleucus** (*Sparrman*). BLACK-AND-WHITE TANAGER. — I saw none of these birds, but my companion told me that he saw a black and white bird while collecting plants on the mountain, which was undoubtedly this species.

51. **Tanagra palmarum melanoptera** (*Hartl.*). BLACK-WINGED PALM TANAGER. — The only example from the island is larger than any one of a large series of continental birds with which it was compared, and has a longer and more slender bill.

Measurements of Tanagra palmarum melanoptera.

		Wing.	Tail.	Culmen.	Width of beak behind nostril.
		mm.	mm.	mm.	mm.
Margarita Island	♂	97	81	16	8
Colombia	♂	89	75	13	9
"	♂	94	72	11	9
"	♂	88	70	12	9
"	♂	93	73	12	9

52. **Tanagra glaucocalpa** (*Cab.*). GLAUCOUS BLUE-WINGED TANAGER. — Abundant about El Valle, occurring in the thick trees, especially the mangoes.

53. **Progne chalybea** (*Gmel.*). STEELY-BACKED MARTIN. — There were two colonies of this bird, one nesting in the crevices of the church at El Valle, and the other under the roofing tiles in Porlamar.

54. **Hylophilus griseipes** *Richmond.* GRAY-FOOTED HYLOPHILUS. — Common about the road-sides and in the scrub around El Valle.

55. **Cœreba luteola** (*Cab.*). VENEZUELAN HONEY CREEPER. — Common, except in the forests: especially so about El Valle.

56. **Mimus gilvus** (*Vieill.*). GRACEFUL MOCKINGBIRD. — Abundant, except in the forest. On the 13th of July two full grown young were brought to me, and after that date I often saw them running about the hillsides.

57. **Polioptila plumbiceps** *Lawr.* LAWRENCE'S GNATCATCHER. — Common at all points of the island. On the 12th of July I found a nest of this species in a scrubby bush, about three feet from the ground. It was much like the nest of the Yellow Warbler (*Dendroica æstiva*), and contained two eggs, white, thickly sprinkled with reddish dots. One of the eggs was addled, and the other was well incubated.

ADDITIONAL BIRDS OBTAINED BY CAPT. ROBINSON IN THE SUMMER OF 1895.

Phaëthusa magnirostris (Licht.). Large-billed Tern.
Sterna eurygnatha Saunders. Red-billed Tern.
Sterna antillarum (Lesson). Least Tern.
Butorides robinsoni Richmond. Margaritan Green Heron.
Ereunetes occidentalis Lawr. Western Sandpiper.
Calidris arenaria (Linn.). Sanderling.
Œdicnemus bistriatus (Wagler). American Thick-knee.
Ægialitis wilsonia rufinucha Ridgw. Rufous-naped Plover.
Ægialitis semipalmata Bonap. Ring-necked Plover.
Ægialitis nivosa Cass. Snowy Plover.
Ægialitis collaris Vieill. Azara's Ring Plover.
Columba gymnophthalma Temm. Bare-faced Pigeon.
Zenaida vinaceo-rufa Ridgw. Vinaceous Dove.
Chætura cinereiventris lawrencei Ridgw. Lawrence's Swift.
Milvulus tyrannus (Linn.). Fork-tailed Flycatcher.
Volatinia jacarini splendens (Vieill.). Glossy Grassquit.
Vireo chivi agilis (Licht.). Agile Vireo.
Arbelorhina cyanea eximia (Cab.). Venezuelan Guit-Guit.
Platycichla carbonaria (Licht.). Yellow-billed Thrush.

About the lagoons I saw several herons, two terns (*Anous stolidus*? and *Sterna* sp.) and two shore-birds not given in either of the above lists.

THE IPSWICH SPARROW IN ITS SUMMER HOME.

BY W. E. SAUNDERS.

OWING to a happy combination of circumstances I had the pleasure of visiting Sable Island recently, arriving on May 16, 1901, and leaving on the 23d. Ever since reading Dr. Dwight's delightful monograph of the Ipswich Sparrow I have longed to visit this bird at home but with little hope that my desire would ever be realized, and it was therefore an unexpected delight when a feasible opportunity occurred. It will be remembered that not only is Sable Island the only breeding ground of this Sparrow, but also that the Sparrow is the only land bird which breeds there,

a fact which seems curious when one considers the migrants which remain for days in both spring and fall. The total number of summer residents is ten, including two Ducks, two Plovers, two Sandpipers, three Terns, and the Ipswich Sparrow.

During my stay, I was in every way highly favored, for not only was the season much farther advanced than at the time of Dr. Dwight's visit, without which I could have been able to see nothing of the nesting season, but on three of our eight days we saw the sun, and though many trifling rains were encountered, there were none that made one desire shelter, so that the whole of all the eight days were available for bird study, when other duties would permit.

The Sparrows were found in increased numbers and their song could be heard at all hours of the day.

The song resembles very closely that of the Savanna Sparrow, but instead of ending with *dzzz* as does that species, the concluding note is a weak imitation of the call of the terns which, as Dr. Dwight truly remarked, can be heard at all hours of the day and night. He has well described this note by the syllables *prēē-a* and they are delivered rapidly and abruptly, almost as much so as one can articulate while giving the letters their full sound.

The birds were not found to be very shy, but their color is eminently protective, and they appear to realize this thoroughly and would often remain motionless and allow a fairly close approach before flying. There was seldom any difficulty in approaching to within comfortable range of the few that I shot.

While I was too early for most nests to have eggs, I arrived at the most favorable time to find them, because the first step in nestbuilding is the excavation of the nest cavity which usually results in the exposure of some black soil, the patch of dark color being easily seen among the dried grass stems which cover the site. A few days later, when these holes were covered with grasses, detection became very difficult indeed.

Three nests were found in the enclosure surrounding the Superintendent's house, and nearly 30 were found altogether, most of them being, of course, incomplete. Of those containing complete sets, four contained 5 eggs, and four contained 4 only, part of one set being hatched. All the nests but five were placed among long

grass where the bleached stems of last year had fallen over, thus increasing the shelter, the exceptions being placed, one in a clump of crowberry (*Empetrum nigrum*), one among dark green rushes, and three in a field of clover, of the most vivid green, surrounding the Superintendent's house. The former was said to be a favorite situation, but such cover was rare on most of the ground where I hunted, and only the one was seen, so situated. The nests are large, deep and thick, sometimes being heavily lined with horse-hair, and always placed in an excavation of one-half to one inch in the ground. A few of the incomplete nests were placed in holes in hillsides, just such positions as the Junco frequently uses, a projecting piece of sod partly sheltering the nest from above.

The chief ingredient in the construction of all the nests is fine, dry grasses; and frequently these compose the whole of the bottom of the nest, there being only a slight difference in the fineness of those placed on the ground and those on which the eggs are laid. The upper edge of the nest is covered with coarser grasses, with a very few weed stems, but the latter increase in number as the ground is approached, and at the ground level the weed stems predominate. Eel grass is often added and sometimes moss, but the centre of the nest against the ground shows from three to six square inches of fine grass only.

The measurements of the nests average as follows:

	Average.	Extremes.	
Diameter inside	2½ inches	2¼ inches	2¾ inches
" outside	5 "	4½ "	5¼ "
Depth inside	2 "	1½ "	2 "
" outside	3 "	2½ "	3½ "

The thickness of the walls is thus shown to vary from one-half to two inches.

The nest in Empetrum was the smallest, all the minimum measurements belonging to it, the reason probably being that this plant grows so thick that the site selected was too small to hold a much larger nest, and the birds have not the art of embracing twigs in it, but place it as a rule entirely free from its surroundings.

The only nest of the Savanna Sparrow to which I have access just now, measures 2⅛ × 4½ in diameter against 2½ × 5, average for the Ipswich, and in depth 1¾ × 2½ against 2 × 3 for the Ips-

wich. These figures utterly fail to give any idea of the enormous difference in the quantity of material present in the nests of the Ipswich Sparrow, which are very thick-walled and substantial; therefore I have weighed them and find that while two ordinary nests of the Ipswich Sparrow average 300 grains each, the nest of the Savanna weighs but 110 grains.

Since returning from the island, a letter from the Superintendent informs me that they had (in July I think) a gale of 60 miles an hour! Such occurrences, coupled with a spring temperature which may be characterized as moderate to cool, explain the absolute necessity that these birds are under to build a heavy and compact nest.

Dry localities were almost invariably selected as nesting sites, only two exceptions to this rule being noted, both on May 20 when I obtained a set of 4 eggs from a nest in low damp ground under long wiry rushes; and found another nest near water but on drier ground among long grass, containing one addled egg, one egg almost hatched, and two newly hatched young.

The birds were seldom close sitters, some of them leaving the nest as soon as an intruder was seen, judging from the fact that the eggs were so often found uncovered. Others would be seen to leave when I was still 15 to 20 yards distant and only the one that had built in the damp locality dared to remain till I got within 2 or 3 feet. Even the mother of the newly hatched young flew when I was 15 yards away but in that instance I was running, and I came over an eminence and down a grade towards her nest which was situated on a slight upward slope facing me and directly in my line of passage, and she could hardly be expected to await such an attack. It must be remembered that all upright objects appear disproportionately large on Sable Island from the lack of trees or other upright growths of any size.

The eggs vary considerably both in size, shape and color. The two largest measure .81 × .64 and .84 × .59 in. and the two smallest .75 × .57 and .73 × .63, the average of the eggs in the six sets in my possession being .79 × .60.

But the variation in color is more surprising to me, perhaps because my limited series of Savanna's show so little variation. Two sets resemble a common phase of the Vesper Sparrow, one

with bright, well defined streaks and blotches of light brown on a greenish ground, the other with a more cloudy effect. Two other sets are almost exactly like some of the Savanna, thickly dotted with fine brown spots so as to hide the ground color; the fifth bears a striking resemblance to some eggs I have seen of the Bobolink, being clouded and washed with dull brown on a dirty greenish white ground, while in the sixth set, 3 eggs are almost exactly like the ordinary type of the Prairie Horned Lark, with the buffy tint of the latter replaced by greenish, and the ground color being sparingly dotted with light brown; the other egg in this set resembling a light colored Savanna's, thickly dotted with brown spots, so as to nearly hide the ground color. I had no time to take a description of the seventh nest, which was taken by Col. Gourdeau, Deputy Minister of Marine and Fisheries, to the Museum of his Department at Ottawa.

Mr. James Boutilier, who seemed to know where nearly every pair nested annually, assured me that pure white eggs were seen in the nests occasionally, perhaps one egg in two years.

UNUSUAL ABUNDANCE OF THE SNOWY OWL (*NYCTEA NYCTEA*) IN NEW ENGLAND AND CANADA.

BY RUTHVEN DEANE.

UNDER a somewhat similar title I published a short article in the 'Bulletin' of the Nuttall Ornithological Club[1] in January, 1877. For two months prior to that date there had been a large migration of these owls through various parts of New England, though largely restricted to the seacoast. I have received information from different localities that another large incursion of Snowy Owls appeared this past winter, though the migration commenced considerably earlier than usual, the first being seen in October. While these owls are not regarded as rare visitors to

[1] Bulletin Nuttall Ornithological Club, Vol. II, No. 1, 1877.

the New England coast and along the shores of some of the Great Lakes, they have this season been found in greater numbers than usual some distance back in the interior.

These large flights seem to occur at intervals of every ten to fifteen years. About ten years previous to my records of 1876 there was a large New England flight, and many correspondents advise me that an unusual number were seen and shot in the winter of 1892–93.

As to the causes which influence these large and erratic migrations various opinions are expressed. Some observers attribute it to a scarcity of their accustomed food, others believe they follow in the wake of an unusual abundance of the regular migratory species on which they prey.

I have corresponded quite extensively with many observers and I gladly take this occasion to express my thanks to all for their courteous replies and interesting information, and take pleasure in quoting from their letters.

NEWFOUNDLAND.

Judge Prowse of St. Johns, Newfoundland, writes under date of March 25, 1902: "The Snowy Owl is a constant visitor in winter, but not very numerous about this part of the island. On the northeast coast, near the Straits of Belle Isle, they have been very numerous this winter; a great many have been shot and the fishermen have been living on them."

NOVA SCOTIA.

Mr. Harry Piers of Halifax, N. S., advises me under date of March 21, 1902, that the Snowy Owls had not been reported as abundant around Halifax, and he had known of only about ten specimens having been received by the taxidermists.

NEW BRUNSWICK.

Mr. George Y. Dalzell, keeper of the Swallowtail Light Station at Grand Manan, N. B., writes me under date of February 22,

1902: "Since receiving your letter about the Snowy Owls I have made enquiry concerning their movements on the island, and find there have been fourteen killed here since the middle of December. Mr. John Moses, the taxidermist, informs me that they were late in coming this year, and that their stay was longer than in former years. They frequent the Three Islands, the Two Islands, and the Duck Islands, small islands to the south of Grand Manan. They live on sea gulls, ducks, rabbits, mice and partridges, as portions and feathers of the above were found in them. I know they eat rabbits as I lost two myself."

Mr. Turner Ingalls, Jr., keeper Southwest Harbor Light Station, Grand Manan, N. B., writes under the date of February 12, 1902: "I first noticed the Snowy Owls on January 4 after a heavy northerly gale, and they remained until about the middle of the present month. I have seen eight or ten of the owls, though only three have been killed."

MAINE.

Mr. Lewis M. Todd of Calais, Me., writing under date of February 23, 1902, states that the local taxidermist has had six or seven Snowy Owls sent to him for mounting, and that six more had been observed in a radius of some twenty miles.

Mr. Homer R. Dill, State taxidermist at Gardiner, Me., reports nineteen specimens of the Snowy Owl received up to February 18, 1902.

Mr. Manly Hardy of Brewer, Me., reports, under date of February 17, 1902, that a good many Snowy Owls have been shot and seen over quite an extent of country, one being seen some thirty miles north of Brewer. He also reports three other specimens which were shot at Biddeford Pool, Me.

Capt. H. L. Spinney, Popham Beach, Me., writes me under date of February 22, 1902, that while he had handled but three specimens himself he had learned of between thirty or forty which had been taken in the State. He speaks of the late date of their arrival on the coast of Sagadahoc County, as they were first observed about the middle of January, and his records of the past fifteen years show that they usually arrive early in November and are seldom seen after the first of December. He also states that the flight

this winter extended further back from the coast than former records would show. Regarding their food, Capt. Spinney writes that they feed largely on small rodents. In November, 1897, one killed and ate one of his live decoy ducks, which at that time was close to the house.

Mr. John A. Lord, taxidermist at Portland, Me., writing under date of February 14, 1902, informs me that he had received thirty specimens between November 21, 1901, and February 5, 1902, and knew of about ten others being killed in the vicinity. Examinations of the stomachs showed about seventy-five per cent to be empty. Others contained mice, moles and shrews.

Mr. Leander White, keeper of the Cape Elizabeth Light Station, Me., reports, under date of February 27, 1902, that several of these owls had been killed in his neighborhood, the first being seen about the 27th of January, 1902.

Mr. J. Merton Swain writes under date of February 18, 1902, from Waterville, Me., that a great many Snowy Owls had been seen and the larger part were reported from the interior; that eight had been seen in Waterville and Fairfield. Mr. Swain states they were first seen about the middle of January, though Mrs. H. B. Bates, of Waterville, Me., sends me a record of a specimen that was shot there on January 2, 1902.

Prof. Leslie A. Lee of Brunswick, Me., writing under date of February 26, 1902, informs me that Mr. John Thompson, the local taxidermist, had reported the killing of five specimens within a few days of February 1, and another was also taken at North Anson, Me. on February 21, 1902.

Mr. Arthur H. Norton of Westbrook, Me., in writing under date of February 24, 1902, and in referring to a few specimens which came to hand, states that two adults shot at Westbrook were extremely fat but their stomachs were entirely empty. One bird weighed four and a half pounds, the other one ounce less; and that a large dark female shot on January 31, 1902, also very fat, contained two *Microtus pennsylvanicus*, swallowed whole; a very light colored male, shot at Gorham, Me., on February 7, was extremely fat. This owl had only a small quantity of mouse hair in its stomach.

Mr. Frederick A. Shaw of Portland, Me., under date of Feb-

ruary 26, 1902, informs me that about fifty specimens were taken in the immediate vicinity of the city, and that they were first observed about December 10, 1901.

Mr. Everett E. Johnston of Lewiston, Me., reports, under date of March 3, 1902, that a few Snowy Owls were shot in his locality in January and February, one of which was feeding on the carcass of a dead horse at the time it was killed.

Mr. F. W. Stanley, keeper of the Duck Island Light Station, McKinley, Me., reports four specimens seen on the island about January 1, 1902.

MASSACHUSETTS.

Mr. M. Abbott Frazar of Boston, Mass., in writing under date of February 19, 1902, advises me that the flight of Snowy Owls was very much later than in former years, and that while he had not kept any records this season, the proportion of birds was not as great as in the recorded migrations of 1876 and 1892.

Mr. Owen Durfee of Fall River, Mass., writes under date of February 18, 1902, that the Snowy Owls were not nearly as abundant as in the winter of 1890–91; the capture of about a dozen birds, at various localities on the Rhode Island coast, had come to his notice, and that he had records of three which were taken on the south shore of Martha's Vineyard. Contrary to the observations of Maine ornithologists, Mr. Durfee states that this season all records have been made on the coast, while in 1890 they worked up the Seaconnet River and tributaries of Mount Hope Bay to a much larger extent. One large, heavily barred specimen, shot at Little Compton, R. I., on February 14, was reported by the local taxidermist to be very fat and the stomach full of rats.

Mr. John E. Thayer, of Lancaster, Mass., in writing me under date of February 17, 1902, says: "I have not heard of any unusual migration of the Snowy Owl in Worcester County. I think in Maine there has been a great many this season, and I am receiving frequent letters offering live specimens, especially from Wells Beach, Me. They were reported to have been caught in traps."

RHODE ISLAND.

Mr. Harry A. Cash, of Providence, R. I., writes me under date of February 20, 1902, that of the eighteen specimens sent to him for mounting, the first was received on January 7, 1902, and the last on February 10, 1902. Eleven were males and seven were females. These specimens were all taken on the Rhode Island coast, with the exception of two, these being collected at Mystic, Conn., and Nantucket. The stomachs of eleven were empty, the balance bearing evidence of dark flesh, probably of ducks and rats; in one stomach was an entire rat, two-thirds grown. One female was shot on January 21, 1902, at Pawtucket, R. I., from a duck shooter's stand, while pursuing a flock of ducks, and was killed over the decoys.

Mr. Simon Dodge, keeper Southeast Light Station, Block Island, R. I., writes under date of March 4, 1902, that he had seen three specimens of the Snowy Owl, which had been killed on the island between January 25 and February 15.

CONNECTICUT.

Mr. James H. Hill, New London, Ct., writes the following most interesting letter, under date of March 18, 1902: "Munnatawket or Fisher's Island, Suffolk Co., New York, lying at the east end of Long Island Sound, near the Connecticut shore, has had during the past months of December, January and February, one of the most noteworthy flights of Snowy Owls, no less than eighteen of these arctic visitors having been seen and fifteen captured, three alive and unhurt. Two of these lend an added interest to the Bronx Park collection of Raptores, the third cut with his sharp bill the 'gordian knot' and the twine that held him captive, and regained his liberty. The writer has been secretary of the Fisher's Island Sportsman's Club for over fifteen years, and during that period a few have been seen and captured, but never before have they been so numerous and in such fine plumage. The island seems to be particularly attractive to these snowy visitors, due no doubt to the fact that the Fisher's Island preserves are well stocked with game — pheasants, quail, English and Belgian hares, the hares,

especially the Belgians, being very numerous and easily captured; and the owls seem to take very kindly to this bill of fare, as a full grown Nyctea, when hungry, makes short work of the best portion of his hareship. In fact, so surfeited do the owls get at times, that I have three records of their having been run down and captured alive. Other Raptores have suffered a similar fate, notably a fine Bald Eagle and a Golden Eagle, both captured on the island. The owls seldom annoy the feathered game."

Mr. John N. Clark of Saybrook, Conn., writes me under date of March 2, 1902, that there had evidently been a large flight of Snowy Owls again in New England. He states that two were brought to him one day, and a third specimen was shot the same day, all within a distance of ten miles on the Sound shore.

New Jersey.

Mr. Turner Green, taxidermist, Jersey City, N. J., under date of April 3, 1902, informs me that a Snowy Owl was shot at Caven Point, N. Y., on January 1, 1902, after a severe storm. The stomach contained a short-tailed mouse. He also states that another specimen was seen about the same date at Bayonne, N. J. Careful enquiry among various sportsmen did not bring out any further records.

New York.

Miss M. R. Audubon of Salem, N. Y., in writing under date of March 3, 1902, states that a Mr. Roberson had seen a number of Snowy Owls across the mountains which divide Salem from Camden Valley and Dorset. One individual was feeding on some rodent, probably a muskrat, as one had been torn from one of his nearby traps.

Mr. Thos. W. Fraine, taxidermist, Rochester, N. Y., in writing under date of March 24, 1902, states that while during the flight of Snowy Owls which invaded the country in 1876, he received over forty specimens, during the past winter only two had been brought to him. The specimens which he examined in 1876, and which were captured along the shore of Lake Ontario, had been feeding largely on fish.

Mr. Elon Howard Eaton, Canandaigua, N. Y., writing under date of March 6, 1902, states that there has been no unusual flight of Snowy Owls in his locality. He states that the collectors and taxidermists report that they have received several, although not as many as in average years. One collector reported four, taken on the shore of Lake Ontario, and states that they were all collected about the 18th of November, the first heavy snow storm of the season coming at that time.

Mr. Wm. S. Johnson, Booneville, N. Y., writing under date of March 19, 1902, informs me as follows: "Snowy Owls appeared in this locality the latter part of December, the last one being seen the last week in February. During this time about twenty, to my knowledge, were observed; fifteen of this number were shot, ten of which were mounted by our local taxidermist. Of these ten only three were females. The stomach contents of five of them were sent to the U. S. Dept. of Agriculture, and were found to contain the remains of the common meadow mouse (*Microtus pennsylvanicus*), one stomach containing the remains of six."

Mr. Thomas Rowland, taxidermist, New York City, under date of March 5, advises me that he had eight Snowy Owls sent to him, which were killed on Long Island, the first specimen being received January 10, 1902. He also states that he received several more of these owls from Canada.

PROVINCE OF QUEBEC.

Sir James M. Le Moine of Quebec, writes me under date of February 19, 1902, that one specimen of the Snowy Owl was observed on his grounds, 'Spencer Grange,' which was very unusual, and that he had received a reliable account of six, which were seen and some of them captured at Compton, P. Q., about fifteen miles north of the Vermont border.

Mr. C. E. Dionne of Quebec, in writing under date of February 27, 1902, informs me that he has seen eleven Snowy Owls this winter, which were shot at or in the neighborhood of the city of Quebec. Out of four which he prepared, the stomachs of three were empty; the fourth contained a red-backed mouse and

a white-footed mouse. He reports that an owl of this species which he examined about eight years ago, shot on the St. Lawrence River, below Quebec, contained a specimen of the Black Guillemot entire, with the exception of the wings and one foot.

Mr. Napoleon A. Comeau, Godbout, P. Q., writes the following most interesting letter under date of March 11, 1902: "Migrations of the Snowy Owl occur almost every year along the north shore of the St. Lawrence River. As the birds alight on floating ice as well as on land, many of them find their way across the St. Lawrence and from there to Maine, or follow the river up, and some are killed near Quebec, and even in the city, according to reports in the local papers. An abundant food supply seems to be the cause. They generally follow in the track of migration of other birds on which they prey. These are Willow Ptarmigan, the Lesser Auk, and the Murre (*Uria lomvia*). The big migration of 1876, which you noticed, followed a very large migration of Ptarmigans. During the present winter they have followed on an immense migration of the Lesser Auk and Murre. Some three hundred or so Snowy Owls have been shot and trapped by residents in this immediate vicinity in a section of about nine miles. I have examined the stomachs of over a hundred and have found invariably the remains of the two species above mentioned. The owls in some cases were nothing but a lump of fat. The migration began here on November 25, 1901, when the first was seen, and has continued at intervals to this date. The last birds are seen generally about the beginning of May, when they disappear entirely. This bird flies and preys by day as well as by night, but the greatest flights are by night. They follow the coast line, as a rule. In January of this year I saw over a hundred birds in one evening from seven o'clock to 10.30 P. M. They are rather shy birds and difficult to shoot, owing to their keen sight and habit of selecting some high point to alight upon, such as a large piece of ice or a rock. They seldom alight on green trees, but select dead stumps. Trappers take advantage of this habit and place steel-traps on stumps or other prominent places to which the owls fall an easy prey. They are considered a good article of food in this region, and the feathers also yield a profit. The Murre, not being a shy bird, is easily

captured by the owls; they are generally caught when sitting on pieces of ice or along the rocks, as is their habit. The flight of the Snowy Owl, like that of all the members of this family, is perfectly noiseless, and its color helps it to approach its prey unawares."

ONTARIO.

Dr. C. K. Clarke of Kingston, Ont., writes me under date of February 18: "The migration of Snowy Owls has extended, as far as I can learn, all over Ontario. In Kingston, sixteen have been killed, to my knowledge."

Dr. G. C. Tremains Ward of Napanee, Ont., twenty-six miles west of Kingston, writes me under date of February 18, 1902, that Snowy Owls this year are probably as abundant as in any previous year, though he had only observed three himself. He referred to one specimen which seemed to be 'located,' as he had seen it several times, and always in the same clump of cedars.

The Rev. J. C. Young of Sharbot Lake, Ont., situated some sixty miles north of Lake Ontario, in writing under date of February 26, 1902, states that there has been quite a migration of Snowy Owls throughout eastern Ontario. Four specimens had been taken in his immediate vicinity during January and February, and a large number had been seen and shot in the County of Renfrew, about fifty miles further north. He further states that this species is usually quite rare in his locality, some years none being seen, but that this season the migration was the largest known in that section.

Mr. George R. White of Ottawa, Ont., writes under date of March 4, 1902: "During the months of January and February of this year there has been a large number of Snowy Owls brought into this city, both alive and dead. I observed five alive in one window. Our local taxidermist has had over eighty specimens sent in to be mounted, and he refused to purchase a number that were offered to him."

Mr. James H. Fleming of Toronto, Ont., sends the following interesting information, under date of March 3, 1902: "The flight of Snowy Owls seems to have been first noticed in southern

Ontario about the 20th of December, 1901. Nearly all my correspondents give the 25th as the date when their abundance was first noticeable. From then on to about the 15th of January, 1902, the owls were spread over the southwestern portion of the Province in sufficient numbers to attract attention. In Toronto the number killed was not less than sixty, and about the same number were accounted for by my correspondents elsewhere. The number killed in Ontario must have greatly exceeded this estimate. All the birds taken during the early part of the flight that I examined were males, and it was not until well on in January that females were at all abundant. The east shore of Lake Huron, from Bruce Peninsula to Sarnia, at the mouth of the St. Clair River, was visited by Snowy Owls in considerable numbers, and they spread through the counties of Middlesex, Oxford and Wellington; the Georgian Bay seems to have been visited only by stragglers. None were reported from Owen Sound. All the country surrounding Lake Simcoe was visited by these owls in more than usual numbers. The birds do not seem to have occurred in the districts of Muskoka and Parry Sound, except casually. I have only one record. They appear to have avoided the wooded country, preferring the older settled country along the Great Lakes. I have no information about the north shore of Lake Erie, and very little from east of Toronto, but a line drawn through Ontario from Orillia to Toronto, almost due south, would mark the eastern limit of their abundance during the flight, which may have extended along the north shore of Lake Ontario to Kingston, but my information is not sufficient to be certain. I did not pay particular attention to the food question. The birds were all in good condition, and outside of Toronto a good many were either shot or trapped while feeding on dead horses or cattle. About Toronto wounded ducks were probably picked up, the Toronto Marsh abounds in field mice, and much fish offal and carrion would be available. Part of the flight has remained in Ontario for the rest of the winter, but the main body passed further to the south or southeast."

Mr. William Holliday of Guelph, Ont., forty-eight miles west of Toronto, writes me under date of March 7, 1902:

"Judging from the number of Snowy Owls I have mounted

this winter, there must have been a very large migration through this section. I have received eighteen specimens between December 19, 1901, and March 7, 1902. One of the number was sent from Winnipeg, December 27, 1901, the sender reporting them abundant in Manitoba. I have been engaged in taxidermy here for ten years, and during that time have not received a single specimen before. Four fifths of the number were females. The stomachs of those which I examined contained the remains of mice and red squirrels."

Mr. Robert Elliott of Bryanston, Ont., under date of March 4, 1902, writes me that the first Snowy Owl appeared about January 22, 1902, the weather being clear and cold at the time. The specimen remained on a grass farm until February 15, frequently perching on the barn for an hour at a time. A few other specimens were seen in January and February. Mr. Elliott also states that a Mr. Owens, taxidermist, living near Mooresville, Middlesex County, received and mounted twenty-two specimens during the winter, and commented on the fact that thirteen years ago he prepared exactly the same number, not having handled a single specimen in the interim. Mr. Elliott says that he is not aware that any of the stomachs were examined for food, but that the first specimen he saw spent three weeks near the carcass of a dead horse in the woods. He also states that the past winter has been remarkable for the number and variety of birds observed.

Mr. William E. Saunders of London, Ont., writes me under date of February 22, 1902, that there has been an extraordinary number of Snowy Owls in western Ontario this season, but their distribution seems to be quite local. At London none were seen. At Rondeau, where there is an extensive marsh on the lake shore, southwest of London, several have been taken, and they are not uncommon there every winter. At Watford, forty miles west of London, three were taken, while twenty miles north, in Biddulph township, a taxidermist was said, on good authority, to have received twenty specimens.

MICHIGAN.

Mr. W. H. Kress of Elk Rapids, Michigan, writes under date of April 11, 1902, that he had received and mounted during the

winter, twenty-eight specimens of the Snowy Owl, and enclosed a most artistic picture of fourteen of these striking birds. He states that they first appeared late in November, 1901, and that they had almost completely destroyed the quail and partridges in that section; the quail having been quite abundant before the inroad of the owls. One specimen, seen flying close to the ground, suddenly stooped and captured a rabbit. Mr. Kress informs me that at least fifty specimens were killed in the vicinity of Elk Rapids.

GENERAL NOTES.

The American and European Herring Gulls. — In 1862, the late Dr. Coues separated the American Herring Gull as specifically distinct from the European Herring Gull, under the name *Larus smithsonianus*, on the basis of slight differences in general size, and in the size and form of the bill, but mainly on the small amount of white at the tips of the primaries. Later an attempt was made to show that these alleged differences were due to age (*cf.* Allen, Bull. Mus. Comp. Zoöl., II, pp. 194–196, April, 1871). As, however, Herring Gulls unquestionably referable to the Old World form have proved to be of more or less frequent occurrence in this country, together with many intermediates, both forms of the Herring Gull have been given a place in the A. O. U. Check-List, standing, respectively, as *Larus argentatus* and *Larus argentatus smithsonianus*. I have, however, never been convinced that my exposition of the case in 1871 was not thoroughly sound.

Although *Larus smithsonianus*, either as a species or subspecies, appears to have never received any recognition abroad, it was not again challenged by American writers till 1898 and later, when Mr. O. W. Knight, after examination of a great number of adult American Herring Gulls shot at Portland, Maine, emphatically claimed the "non-existence of the so-called subspecies *L. a. smithsonianus*" (*cf.* Auk, XVII, Jan. 1900, pp. 63, 64). A year later Dr. Dwight, on wholly different material, reached practically the same conclusion in his paper on 'The Sequence of Moults and Plumages of the Laridæ' (Auk, XVIII, Jan. 1901, pp. 49–62). In referring to the white areas at the tip of the first primary in the American Herring Gull, and to the wide range of variation in these markings, which vary from two small distinct white areas to a single large apical white spot, he asks "Is the European bird always marked by one white area?" Owing to the absence of large series of European specimens in

American museums, the question was not easy to answer. Hence, when an opportunity presented itself, in July, 1901, to examine the series of these birds in the British Museum, through the courtesy of the officers of that grand institution, I eagerly availed myself of it. The result of my examination of this material may be briefly summarized as follows: 40 adult birds were examined; 9 out of 15 specimens killed in the British Islands were of the *smithsonianus* type, and 6 of the *argentatus* type; of 16 specimens from various localities in North America, 4 were of the typical *argentatus* type and 12 of the *smithsonianus* type. Thus much more than half of the specimens killed in the British Islands were like the so-called *smithsonianus* type, and one fourth of the American specimens were of the so-called *argentatus* type. Most of the British examples, it should be added, were birds of apparently the second or third year, and the same is true of the American examples examined.

From the foregoing it is evident that there can be but one conclusion in respect to the Herring Gulls of the two sides of the Atlantic; namely, that the extent and form of the white apical spots on the first primary vary with the age of the bird, being small and separated in birds that have just acquired adult plumage, and increase in size with age till, in a small percentage, consisting of probably very old birds, the two white spots at the tip of the first primary become merged into one, forming a single greatly lengthened white area; that this is true of both European and American birds; and that the alleged characters of *Larus smithsonianus* are invalid, the supposed differences in the form and size of the bill being also variations due to age. — J. A. Allen, *Am. Mus. Nat. Hist., New York City.*

Leach's Petrel at Westford, Mass. — Mr. E. Abbot informs me that a specimen of *Oceanodroma leucorhoa* was shot on Forge Pond, September 25, 1902, and that the bird is now in the Westford Public Library. — Reginald Heber Howe, Jr., *Longwood, Mass.*

European Widgeon in Michigan. — On March 27, 1902, Mr. William B. Boulton, of New York, was on one of the Bay points at Munroe Marsh, Michigan (on Lake Erie) with a friend, when a flock of five Widgeon came towards the decoys, but soaring well outside. Only one bird was hit and came down with a broken wing. The hunter went out in his boat and shot it, and not until the bird was in hand was there any suspicion that it was a splendid male specimen of *Anas penelope.*

Another male, in almost as good plumage, was taken in April, 1900, and a third in April, 1892. All were preserved. We have no records of females, nevertheless I believe we occasionally take them and their identity is not suspected, as there is not so wide a difference between the plumage of the females of the two species as there is between the males. — Harold Herrick, *New York City.*

The Yellow-crowned Night Heron at Portland, Me.— I have in my collection a handsome adult female specimen of the Yellow-crowned Night Heron (*Nycticorax violaceus*) which was shot on April 13, 1901, in Back Cove, Portland, Me. The captor was a boy. He took the bird to Mr. John A. Lord, the taxidermist, by whom it was mounted. I saw it immediately after it was preserved and also examined its body. Besides this evidence that it was taken here, I have the assurance of Mr. Lord, which alone would be sufficient. I believe the Yellow-crowned Night Heron has never before been recorded from this part of New England.— HENRY H. BROCK, *Portland, Me.*

A Third Maine Specimen of the Little Blue Heron. — Early in April of the current year, I received from Mr. Herbert A. Arey of Vinal Haven, Me., a specimen of *Ardea cærulea*, to be mounted for Mr. Arey. His letter, dated April 2, 1902, states: "The bird was shot yesterday at the east end of Carver's Pond, Vinalhaven." It was a male, a fine specimen in the light phase, and was in good bodily condition; it would probably have bred had it not strayed from its kind and home.

The two other Maine records are: A bird in light phase, Scarborough, September, 1881 (Brown, Bull. Nutt. Orn. Club, VII, p. 123). A female, Popham Beach, May 19, 1901 (Spinney in Swain's editorial, Journ. Maine Orn. Soc., III, p. 30). — ARTHUR H. NORTON, *Westbrook, Me.*

The King Rail again near Portland, Me.— I have already (Auk, Vol. XIII, p. 79) noted the capture of a specimen of the King Rail (*Rallus elegans*) at the Dyke Marsh, near Portland, Maine. I have since obtained another specimen taken at the same place by Mr. John Whitney. It was brought to me in the flesh and was dissected and mounted by myself. It proved a male in good condition. The date of its capture was December 17, 1899.

The King Rail is thus shown to have occurred three times[1] in the vicinity of Portland.— HENRY H. BROCK, *Portland, Me.*

The King Rail in Winter near Washington, D. C.— On January 19, 1901, I observed in the Washington Center Market a Red-breasted or King Rail (*Rallus elegans*) which had been received that day from the shore of the Potomac River near Alexandria, Va. I can find no published winter record for this species in this vicinity, although it is a regular but uncommon spring and early fall migrant, and may be expected in exceptionally mild winters like the present. The local gunners and game dealers call the bird 'King Ortolan' and 'King Rail.'— HUGH M. SMITH, *Washington, D. C.*

The Red Phalarope in North Carolina.— Mr. Arthur T. Wayne's note in 'The Auk' for July, 1901, XVIII, p. 271, on the Red Phalarope

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[1] See Brown, Bull. Nutt. Orn. Club, Vol. VII, p. 60.

(*Crymophilus fulicarius*) in South Carolina, makes me think that the occurrence of a flock of at least thirty of these birds on the southern North Carolina coast may be worth recording. On April 2 or 3, 1896, within a day or two of our finding at Morehead City, N. C., the Glaucous Gull which Dr. Coues recorded in 'The Osprey', we were shown by the light-keeper of the Cape Lookout Light, about a dozen dead Red Phalaropes which had been killed by striking the light-glass. The keeper, who seemed trustworthy, told us that as many as twenty more exactly like these had been killed two or three nights before, and most of them had been picked up and destroyed. The ten or more which we found, lying in the grass at the foot of the tower, were badly decomposed, and we managed to preserve only two shabby specimens. All that we saw were in transition plumage; mainly gray and white, but some heavily mottled with red below and with brown on the back. The three we examined were females.

On March 17, 1898, my father and I, with Mr. L. A. Fuertes, saw from a steamer enormous flocks of Phalaropes, apparently Red, about fifty miles off the coast of northern South Carolina.—GERALD H. THAYER, *Monadnock, N. H.*

The Name of the Zenaida Dove.—In 1801, John Latham described a pigeon from New Holland which he called 'Southern Pigeon' (Gen. Syn. Bds., Suppl., II, 1801, p. 270), giving it the same year, in another publication, the name *Columba meridionalis* (Ind. Orn., Suppl., 1801, p. lx), and stating that he saw a specimen of this at Mr. Swainson's. *Columba meridionalis* has until recently been considered as unidentifiable. In 1898, however, Messrs. Forbes and Robinson (Bull. Liverpool Mus., I, 1898, p. 36), claimed to identify it with the well known Zenaida Dove (*Columba zenaida* Bonap.), on the basis of "three aviary specimens, which have been identified by Latham as his *Southern Pigeon* (Gen. Hist. viii, p. 28). One of these is the type of his 'female or young,' *Southern Pigeon, var. a*, and is labelled by Lord Derby '*Columba meridionalis, se ipso judice*'; the second is marked, 'Dr. L. considers this an old male.' These prove to be *Zenaida zenaida*, Bp. The third specimen is inscribed, 'Considered by Dr. L. as a young male.' We have identified this as *Zenaida auriculata* Des Murs)."

On turning to Latham's 'General History of Birds,' Vol. VIII, 1823, p. 29, we find that, in an addition to his original description of the Southern Pigeon, he mentions the three birds (one "in the collection of Lord Stanley") referred to by Forbes and Robinson, and which are doubtless correctly identified by these gentlemen, but they are entirely different and additional material to that on which *Columba meridionalis* was originally based. But this supplemental matter, added twenty-two years after the publication of the original description of *Columba meridionalis*, does not establish any of the three specimens mentioned by Forbes and Robinson as the type of the original *Columba meridionalis*, said to have come from

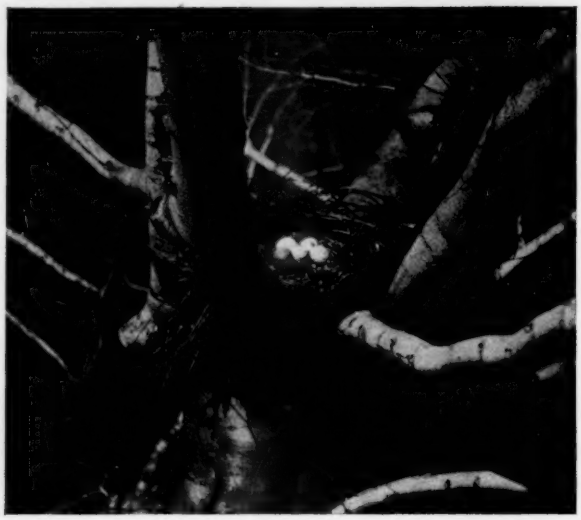

FIG. 1. NEST AND EGGS OF RED-SHOULDERED HAWK.
See page 287.

FIG. 2. NEST AND EGGS OF RING-BILLED GULL.
See page 279.

New Holland, and the description of which shows that it could not have been *Zenaida zenaida*.

In other words, Latham's later reference to additional material has no bearing upon the type of his original *Columba meridionalis*, which is evidently not the Zenaida Dove, and therefore the name *meridionalis* cannot legitimately supplant Bonaparte's *zenaida*. — J. A. ALLEN, *Am. Mus. Nat. Hist., New York City.*

The Bald Eagle in Ohio County, West Virginia.— It is with much pleasure that I send you the first authentic record of the taking of a specimen of the Bald Eagle (*Haliæetus leucocephalus*), in Ohio County, West Virginia. The bird was an immature female, in the second year's plumage, which is known as the 'Gray Eagle' stage. It was killed December 27, 1901, on the farm of Mr. Ridgeley Jacob, near Clinton, W. Va., the manner of its capture being unique. Two young sons of Mr. J. S. Duvall, who lives upon the above mentioned farm, were playing in a stream, when one of the youngsters ascending the bank spied the great bird just beyond the crest of the knoll. The child — who was only about ten years of age — instead of running away, boldly picked up a stone and threw it with such telling force and accuracy that he broke the bird's wing. Immediately the raptore faced about and ran at the boy, who fled at its approach, while his brother — two years his junior — succeeded in hitting the pursuing bird in the back of the head and fracturing its skull with another stone. The older boy stopped, upon seeing the eagle staggering about, and ran back, pounced upon the feathered enemy and held it until life became extinct. The bird weighed nine and a quarter pounds, its length was thirty-nine inches, extent seven feet eight and a half inches. The skin is now in my possession.— ROBERT BAIRD MCLAIN, *Wheeling, W. Va.*

Nest and Eggs of the Red-shouldered Hawk.— The nest shown in the photograph (Pl. IX, fig. 1) was in a beech tree about fifty feet from the ground. When about to climb the tree I thought of taking my kodak with me, expecting the bird might come into the tree while I was at the nest, as they sometimes do, and that I could perhaps get a picture of her. When I reached the nest I found that a limb large enough to hold me ran out from the body of the tree so that I could get about eight feet from the nest, which would, I thought, be far enough to get a picture. I made three exposures, all with the shutter set at $\frac{1}{100}$ second, two of which produced very good negatives, the one from which the picture I am sending was printed being perhaps a little the better. The nest was about two feet across and the eggs were slightly incubated, as I discovered when blowing them. The set of five eggs is the largest set of eggs of the Red-shouldered Hawk I have ever found in this locality. The picture was taken with a "No. 3 Pocket Kodak de Luxe," which is a very convenient instrument for this kind of work.— GEO. L. FORDYCE, *Youngstown, Ohio.*

The Pileated Woodpecker (*Ceophlœus pileatus*) in Minnesota. — The accompanying photographs (Plate X) were taken in deep woods along the Le Sueur River about four miles southeast of Mankato, Minnesota, in the early spring of 1897, and show clearly the work of the Pileated Woodpecker or 'Logcock.' This woodpecker is now seldom seen in the southern part of the State and is little known to most people.

Both stumps were dead maples. That shown in Fig. 1 was broken off about six feet from the ground and at the fracture was fourteen inches in diameter. Three openings were originally made in the stump by the birds but these do not show in the photograph, since the camera did not directly face them. When examined, a groove had been dug away along the exterior so that the two upper openings converged into one; but there was still a narrow constriction which indicated that they had, most likely, once been separated. The upper portion of this hole was 10 inches long by 6 inches wide and the lower was 15 inches long by 4½ wide. Below these was another hole 6 inches long by 3 wide. The two lower holes did not expand after entering but the upper, where the stump had broken before the photograph was taken, extended slightly upward and a much greater distance downward, the latter extension being enlarged to make room for the nest. At the base of the stump were many chips some of which were half an inch in diameter and 3 inches long. The wood had decayed some but it was still too firm to be broken easily with the hand or by an ordinary blow, which showed that the bird must have exerted great force in order to remove the chips. The broken end of the piece of the stump that had fallen faced the camera directly and the large, nearly central excavation is plainly visible.

Fig. 2 shows another maple stub which stood within a few feet of the one just described. The top had long since fallen off and what remained was 18 feet high and a foot in diameter. There were three holes near the top, in fact the uppermost one ran entirely to the top and was 3½ feet long by 4 inches wide. Just below this was a second which was a foot long and 5 inches wide. A third just below the second was 1½ feet long and 4 inches wide. At the base this stump had been pecked all around so that it was almost ready to fall. The holes at the top of the stump were evidently made for nesting purposes but the work at the base was probably done in search of grubs or insects which were lodged in the decaying wood.

A few specimens of this retiring bird are still seen in the region of Mankato but the rapid disappearance of the forests marks its speedy withdrawal. In the early spring of 1900 a specimen was brought to my laboratory from a region six miles south of Mankato, and at about the same time in 1901 a specimen was taken twelve miles south of Mankato. One or two other specimens were reported from the same region at the time the latter specimen was taken.

While on a three months' collecting trip in northern Minnesota in the region of Lake Vermillion last summer about eight of these birds were

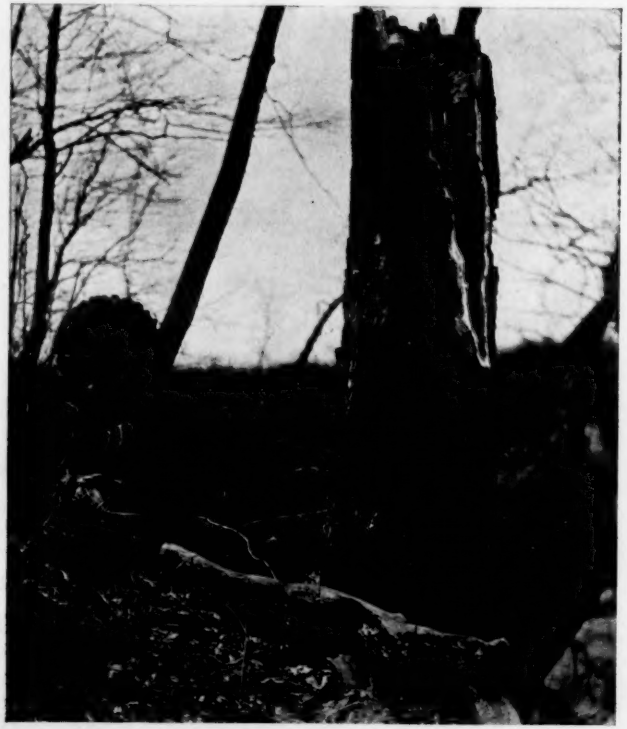

FIG. 1

WORK OF THE PILEATED WOODPECKER.

FIG. 2.

either seen or heard. This region is densely wooded and uninhabited except by an occasional lumber camp. So far as noticed the birds were always in pairs.—ULYSSES O. COX, *Mankato, Minn.*

The Song of the Alder Flycatcher.—I have studied the notes of the Alder Flycatcher for two years, very closely, in Maine where it nested near the house, and I heard its song and various other utterances nearly all day. The ordinary song, as I know it, consists of two notes much like the Chebec's. It is in the hoarse tone of the Phœbe, and is jerked out with a backward jerk of the head, after the manner of the Least Flycatcher, and to my ear, it sounds like *red-dy*, sometimes — but not by any means generally. He gives in addition to this, another two-note utterance, much lower, and of a clear musical quality, very different from the hoarse common song, without tossing the head, or jerking.

Besides these he has several other utterances, a loud clear *queoe*, several times repeated, as if to command attention, and a low plaintive *qu?* — *qu-eù*. In addition to these he gives many different notes in an undertone, which can neither be described nor imitated by the human voice. In fact, the bird is extremely versatile. My studies have always been made where I could *see* as well as hear the bird, so that there is no possibility of mistake. I have never been able to make Dr. Dwight's, Mrs. Wright's or Mr. Chapman's characterization of the song fit my bird, but I learned long ago that no two persons hear a bird note alike, or, rather, that no two birds have exactly the same utterances.— OLIVE THORN MILLER, *Brooklyn, N. Y.*

The Occurrence of the Prairie Horned Lark at Southern Pines, N. C. —The past winter at Southern Pines, N. C., was called one of unusual severity. After passing through weeks of weather hardly to be equalled in the north by stormy March or April, it was hardly a surprise to awake one morning in February and find the sand covered with nearly a foot of snow. The snow melted rather slowly and as I picked my way along the street on Feb. 19 I was surprised to hear the familiar call of the Horned Lark. I followed the flock, which consisted of eight birds, for some time, satisfying myself as to their identity, though the call was sufficient. The next day they were about the streets, which were bare only in places, the snow mixed with sand by the passing teams melting faster than where undisturbed. They were less shy the second day and I got quite near to them. They were very dull colored and probably more or less stained with the soot which is everywhere about in that country. Their small size and dull colors leave little doubt they were the common form (*Otocoris alpestris praticola*). They were not seen after the 20th. I judge records of the Horned Lark this far south are not frequent.— C. H. MORRELL, *Pittsfield, Me.*

The Boat-tailed Grackle as a Stow-away. — On the afternoon of June 7, 1898, the ocean steamship 'Tallahassee' left her dock in Savannah,

Ga., en route for New York. The hour of leaving was somewhat later than the scheduled time, and darkness had settled down before Tybee Island had been passed, and when the waning moon had risen the craft was well out on the open sea. The following morning daylight found her out of sight of land, enjoying, as from the beginning, a calm voyage, which condition continued until her destination was reached. It was then discovered that a female Boat-tailed Grackle (*Quiscalus major*) was on board, where in all probability it had come during the period of darkness on the Savannah River.

The next day, June 9, it was still on board, and it was then evident that it was an unwilling passenger. From the first it had been rather wild, and remained in the rigging at the mast heads. It was observed to make several flights out from the ship, rising higher in the air, and circling quite around, always returning to its elevated perch. As hunger pressed it, it became less timid and came down on the cabin roof in search of food. When darkness came the bird was still on board. The last day of the voyage, June 10, the sun was well up when I went on deck, and the Jersey Heights were astern. My first thought was for our avian fellow-passenger, but a careful search showed that it was gone, probably having left with great gladness at the first positive view of land. This instance seems of more than a passing interest, showing an actual case of straggling by the agency of a ship. — ARTHUR H. NORTON, *Westbrook, Me.*

The Grasshopper Sparrow in Maine, and Other Notes.— When returning from a short trip with Mr. J. M. Swain, on June 8, 1901, we heard a thin sparrow-like song which we could not identify. The bird was in a large field not far from my home, and as the singer proved shy, I got my gun and soon secured it. It proved to be a Grasshopper Sparrow (*Coturniculus savannarum passerinus*), the first to be taken in the State since Boardman's original specimen, captured many years ago.

A Red-tailed Hawk (*Buteo borealis*) was seen May 1, 1901. Though not uncommon in other localities it is rare here.

A Scarlet Tanager (*Piranga erythromelas*) was seen here May 22, 1900. It is the only one seen in many years.

The Meadowlark comes regularly, though in small numbers. The present year, 1902, they have sung constantly in the field back of my home. — C. H. MORRELL, *Pittsfield, Me.*

Another Scarlet Tanager for Colorado.— On May 17, 1902, a male Scarlet Tanager (*Piranga erythromelas*) was shot at Palmer Lake, El Paso Co., Colorado, by Wm. C. Ferril, Curator of the Colorado State Historical and Natural History Society. The specimen was mounted by the writer, in the routine work of the museum, and is now in the collection at the State Capital, Denver, Colo.

This, I believe, is the fourth capture of the species within Colorado, and the fact seems worthy of record.— HORACE G. SMITH, *Asst. Curator, State Hist. and Nat. Hist. Soc., Denver, Colo.*

Piranga rubra — Another Long Island, N. Y., Record.— It will be of interest in connection with the record of this species made by Dr. Braislin (*antea*, p. 147), to note another.

My correspondent, Mr. Selah B. Strong of Setauket, L. I., wrote to me April 11, 1901, as follows: "This morning I saw a, to me, new bird. It was about three quarters the size of a robin. Head, and nearly his entire body, between cardinal and scarlet with a shade of grayish brown on wings." I at once sent Mr. Strong a specimen of the Summer Tanager for comparison and he wrote that there was no doubt of the identity of the bird.

On April 22 Mr. Strong wrote as follows: "The Tanager is becoming very tame and I see him constantly; during yesterday's storm he was swinging on the vines on the front of the house, and when I went out of the door he flew from under the steps; again he was on the ground in front of my study window and did not mind our watching him. At present he is flitting among the trees in the orchard."

A subsequent letter from Mr. Strong stated that although the bird remained over ten days on his premises it finally disappeared.— WILLIAM DUTCHER, *New York City.*

Blue-winged Warbler (*Helminthophila pinus*) near Boston, Mass.— In the afternoon of May 29, at Waverley, Mass., I was walking in a meadow through which a brook flowed. The banks of the brook were thickly grown with trees and shrubs. From the border of this growth came the two-note song of this warbler, and it was repeated continuously during the hour or more I spent in the vicinity. I first saw the bird working his way through a tall bush, and while I watched him his preference seemed to be for the smaller trees and border shrubs. He was not shy, so I had excellent opportunity, sometimes from within three or four feet, to observe all his distinctive markings. I think there were two birds there, but I am positive of only one, an adult male.— GUY EMERSON, *Brookline, Mass.*

Capture of Kirtland's Warbler at Ann Arbor, Michigan.— I have the pleasure of recording the capture of a fine female Kirtland's Warbler (*Dendroica kirtlandi*) taken by myself on the morning of the 14th of May of this year, almost within the city limits of Ann Arbor. I had the pleasure of watching the motions of this rare bird, as it was low down on the branches of an elm at the side of the road. This bird was very slow, yet graceful in its movements, as it searched the buds and leaves for its food. I went so close to it that I could see the markings plainly and knew it was a Kirtland's, for it is almost exactly the counterpart of the one we have here in the Museum. While I observed it I did not hear a note and its slow, deliberate movements reminded me of *Dendroica palmarum*. I should have watched it longer only it was likely to be frightened away by passers-by, so I shot it and have it now finely mounted. — NORMAN A. WOOD, *Ann Arbor, Mich.*

The Louisiana Water-Thrush (*Seiurus motacilla*) near Boston. — On the morning of April 13, 1902, I found a Louisiana Water-Thrush feeding about the edge of a pool of water near my house in Wellesley, Mass. He remained there for at least ten days, being last seen on the 22d. At first he sang with great constancy, though hardly with full voice, but after a few days he fell silent, as if (so I thought) he had discovered that he was out of his latitude, and was becoming discouraged. As I determined his identity with the aid of nothing but a field-glass I am pleased to be permitted to add, by way of confirmation, that he was seen on three occasions by Mr. C. J. Maynard. To the best of my knowledge the species has never before been recorded from eastern Massachusetts. — BRADFORD TORREY, *Wellesley Hills, Mass.*

Seiurus motacilla in Eastern Massachusetts.—On May 21, 1902, Messrs. Francis G. and Maurice C. Blake of Brookline observed a single bird on the north bank of the Charles River, above Waltham. The bird was watched from within a few feet and there is no doubt of its correct identification.— REGINALD HEBER HOWE, JR., *Longwood, Brookline, Mass.*

The Carolina Wren in Eastern Massachusetts.— On May 4, 1902, I found a Great Carolina Wren (*Thryothorus ludovicianus*) in an orchard in Belmont, Mass. The bird was singing freely. The people in the house near by said that they had heard him about the place for three or four days. Since May 4 I have neither seen nor heard the bird. According to Messrs. Howe and Allen, 'Birds of Massachusetts,' p. 92, this is the seventh record of this bird for the State, and the only record for the spring.— RALPH HOFFMANN, *Belmont, Mass.*

A Mockingbird near Boston. — I observed a Mockingbird (*Mimus polyglottos*) at Roslindale, a suburb of Boston, March 23 of this year. I had learned of the bird's presence through Mrs. S. Stevens of Roslindale, who saw him first Feb. 27 and afterward several times during March. She last observed the bird March 27. When I saw him he was in full song and mocked with varying degrees of accuracy, the songs of the Bluebird, Robin, White-eyed Vireo and Bobolink, the long call of the Downy Woodpecker, and the *wick-up* call or song of the Flicker. I detected no hint of any domestic sound in his mimicking, and this, together with the fact that his tail-feathers were in perfect condition, suggest that he was a wild bird and not an escaped captive. This Mockingbird was very likely the same as the one observed on several different dates and in localities at some little distance from this by Dr. A. L. Reagh. — FRANCIS H. ALLEN, *West Roxbury, Mass.*

The Catbird again in Rhode Island in Winter. — Noticing the recording of *Galeoscoptes carolinensis* in Massachusetts and New Hampshire in winter (Auk, XIX, April, 1902, p. 208), it may be of interest to report that I

have seen an individual of this bird in Pawtucket, R. I., several times during the past winter. The first date was Dec. 28, 1901; the second, Jan. 16, 1902; and the subsequent dates were Feb. 3 and 12, and March 4, 1902. There is no doubt it was the same bird each time, as each observation was made in the same locality, — a swampy sheltered stretch along an old canal. The last time I recorded this bird he appeared to be having trouble with a flock of Jays. — C. C. PURDUM, M. D., *Pawtucket, R. I.*

Note on Birds from the South Pacific. — Mr. Joseph R. Slevin, cadet on the S. S. Ventura, has kindly presented to the California Academy of Sciences the birds that came aboard during the last voyage, namely: one male *Oceanodroma leucorhoa*, January 27, 1902, Lat. 3° 30′ S., Long. 167° 10′ W.; three female *Sterna fuliginosa*, one male *Puffinus chlororhynchus*, one male *Puffinus nativitatis*, January 28, 1902, Lat. 9° 21′ S., Long. 169° W. All these birds struck the ship in the night when it was raining, probably lured to it by the lights. The *Oceanodroma leucorhoa* does not differ from specimens from California, Oregon, and the Grand Banks. This species perhaps affords another instance of interhemisphere migration. — LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco, Calif.*

Unusual Winter Records. — Owing to the unusually mild weather and frequent thaws of the past winter, a great many birds have wintered here (Cambridge, Mass.) which usually pass farther south. I have observed the following: —

American Robin. Large flocks, seen about Arlington Heights until February 1, after which date only a few were seen until the spring migration. Their chief food was the berries of the buckthorn.

Hermit Thrush. One seen on the 14 and 16 of December in the Harvard Botanical Gardens in this city.

Long-billed Marsh Wren. One seen in the Fresh Pond marshes until February 12.

Swamp Sparrow. Several seen in the Fresh Pond marshes throughout the winter.

White-throated Sparrow. One seen December 7 and 8; and one singing on March 28, near Belmont. They probably wintered.

Savanna Sparrow. One seen at Ipswich on March 31. As Mr. R. H. Howe, Jr., shot one at the same place on January 18, this probably had wintered there.

Meadowlark. Several seen in Fresh Pond marshes until December 17.

Red-winged Blackbird. Several seen throughout the winter in the Fresh Pond marshes.

Cowbird. Two seen in the Fresh Pond marshes on December 26.

American Woodcock. One seen on December 1 and 8 on the edge of a pool near Arlington Heights.

Towhee. On March 22, my friend, Mr. John De Q. Briggs, saw two Towhees at Plymouth, Mass. As they do not usually arrive in Massachusetts before the 20th of April, it is probable that they had wintered in that region. — ARTHUR C. COMEY, *Cambridge, Mass.*

Colorado Bird Notes.— I desire to record a Western Blue Grosbeak (*Guiraca cærulea eurhyncha*) taken near Altona, Boulder Co., Colo., August 16, 1901. The farthest north this bird had previously been observed in Colorado was at Morrison.

I wish also to record the observation of an Indigo Bunting (*Cyanospiza cyanea*) near Clear Creek, Denver, Colo., May 7, 1901. This is the fourth record for Colorado.

May 19, 1900, I found twelve Forster's Terns (*Sterna forsteri*) breeding at Barr, Colo. Mr. Ridgway states (Bull. Essex Institute, V. Nov. 1873, 174) that a few were found breeding in the State. I have found no records of their breeding here since that time.

Also at Barr, on June 20, 1900, I found a set of Canvasback's (*Aythya vallisneria*) eggs, and on July 4 I found another set, which was apparently laid by the same bird. I was informed upon good authority that there were two other pairs breeding in the vicinity. As far as I can determine this is the first record of the Canvasback's breeding in Colorado.— A. H. FELGER, *Denver, Colo.*

Some Southern New Hampshire and Western Massachusetts Notes. — The young bird student who has developed comparatively good observing powers, but has as yet no reputation, is unfortunate if he is made sole witness to interesting bird happenings which cannot be authenticated. I cannot hope that the following will all be accepted as records; for, by singularly bad luck, the bird was not secured in any one of the more interesting cases; and I can only wish they had fallen to the lot of some trusted man.

NEW HAMPSHIRE.

On July 28, 1900, I saw on the shore of a small lake (Nubanusit Lake) in Hillsboro County, southwestern New Hampshire, just over the line from Cheshire County, a Lincoln's Sparrow (*Melospiza lincolnii*), whose actions seem to prove it a breeding bird.

Nubanusit Lake, partly in Cheshire and partly in Hillsboro County, is a deepish sheet of clear water, of irregular form, being nearly three miles long and varying in width from less than a tenth of a mile to about a mile and a quarter. It lies at a height above the sea of 1368 feet, while some of the spruce-clad hills by which it is surrounded reach a height of nearly 2300 feet.

The lake shore, which is now almost entirely wild, is here and there swampy and bush-grown, but mainly covered by a dense forest of fair-

sized second-growth spruce trees; while in a few places these have lately been cut, leaving brush-heaped and bramble-covered clearings, with small clumps of spruce saplings; and these tracts are the breeding ground of many Song and White-throated Sparrows. The general aspect of the place is so northern, and its summer avifauna includes so many more or less strictly Canadian species, such as Swainson's Thrushes, Olive-sided Flycatchers, Winter Wrens, Loons, Brown Creepers, Myrtle and Magnolia Warblers, etc., that one is tempted to the hope of finding some still more northern birds breeding there.

As I was walking along the shore of this lake, at one of the cleared and scrubby points, without a gun, on the afternoon of July 28, 1900, a small sparrow, holding something in its bill, hopped onto a bush-top about four yards ahead of me, and fluttered from twig to twig, chirping anxiously. At first glance I saw that it looked wrong for a Song Sparrow, and at the second, as the bird flew to a still nearer bush, that it was an unmistakable, clearly marked Lincoln's. Flying back and forth from one bit of scrub to another, with all the actions of a bird disturbed over an intruder's near approach to its nest, it stayed in plain sight before me, at a distance varying from three to six yards, for fully two minutes, during which time I had, short of actually holding it in my hands, the fullest possible opportunity of studying its form and markings, in many aspects. When it finally dropped to the ground among the lower bushes and disappeared, I had time to make only a short search for a possible nest, and was forced to come away without even finding the bird again. Since then my father and I have searched carefully the shore of the lake; once later in the summer of 1900, and twice in the summer of 1901; but we have seen no further signs of *Melospiza lincolnii*. It is a species I know comparatively well, both in the hand and at large, having grown very familiar with it during the spring migration of 1900, and there is, for me, no possible doubt that the Nubanusit Lake bird was an actual Lincoln's Sparrow.

In a wood of tall mixed timber, at Chesham, N. H., six miles north of Mt. Monadnock, on May 18, 1899, my father watched for several minutes at close range a female Black-backed Three-toed Woodpecker (*Picoides arcticus*). The bird was feeding on a stump fifteen feet above his head, and he had an excellent chance to examine it. Considering the lateness of the season, this is a very southern record.

On August 19, 1901, I saw at Dublin, N. H. (1500 feet above sea-level), at the northern base of Mt. Monadnock, a Louisiana Water-Thrush (*Seiurus motacilla*). Early that morning, as I was lying just awake in my open tent among birch and poplar saplings, listening to the chipping of many early migratory warblers, I heard near by an unusually loud and ringing Water-Thrush call. The northern Water-Thrush (*S. noveboracensis*) is a common migrant here, and even breeds regularly in one locality, and, though I was surprised by the loudness of the chip, I had no thought of seeing anything but one of these birds. Sitting up in bed, I began 'squeaking' with my lips, and almost instantly the Water-Thrush

flew to a birch-branch within ten feet of the front of my tent, and stayed there in full view for fifteen or twenty seconds, while my astonished eyes took in its gleamingly white superciliary stripe, widely immaculate throat and belly, buffy sides, and dark crown clearly defined against a lighter back. I could scarcely have had a more complete and convincing view of a bright-plumaged southern Water-Thrush, inasmuch as its large bill was the only distinctive point of which I did not manage to record a clear image. I hurriedly got up and went to the house for a gun, and was delighted to still hear the bird's ringing chip when I came out armed. But though I heard it several times thereafter and twice saw it at a distance, it proved extremely shy or restless and soon escaped me completely. No doubt this is too important a record to be accepted on such insufficient evidence, and I must stand alone in my absolute conviction that *Seiurus motacilla* has wandered to New Hampshire.

The Philadelphia Vireo (*Vireo philadelphicus*), which is known as an extremely rare visitant to Massachusetts, and has never been recorded from the northwestern part of that State, seems to be a regular and not very uncommon migrant in the vicinity of Mt. Monadnock, in the southwestern corner of New Hampshire. We have shot one in late May, 1897, near Fitzwilliam, within a mile or two of the Massachusetts line, on the south side of the mountain; one in late September, 1899, at Dublin, on the north; and a third at the same place and season in 1900. Besides these three, which are all preserved in our collection, we have seen and positively identified several others in the fall migration at Dublin. All these we have seen were in the company of flocks of migrating warblers, in scrubby second-growth along road-sides.

Massachusetts.

Since the finding of three nests of the small Shrike (be it *migrans*, *excubitorides*, or *ludovicianus*), by Mr. S. G. Tenney in Williamstown several years ago, there does not seem to be any record of the bird's occurrence in Berkshire County. It is therefore worth recording that on August 18, 1900, I saw a brightly-plumaged small shrike on one of the high pasture hills between Lanesboro and Berkshire village. The bird flew from a low bush near me to the top of an elm tree, where I watched it for several minutes. This is the only one I have seen in the region, though I have found in the thorn-bushes of those hills several old nests which seemed to be shrike nests.

On August 15, 1900, a very large young Goshawk (*Accipiter atricapillus*), in brilliantly mottled plumage, flew close past me on the heavy-forest-bordered road low down on the eastern side of Hoosac Mountain, just within the boundaries of Berkshire County. This is perhaps the first summer record for the county. On August 21 of the same year, I saw two Duck Hawks (*Falco peregrinus anatum*) circling about over the Cheshire reservoir, in the town of Lanesboro.

The White-winged Crossbill (*Loxia leucoptera*) does not seem to have been recorded from any part of Massachusetts in summer. In the wonderful spring of 1900, when, amid an unusually copious migration of birds from the south, the Lesser Red-poll Linnets lingered about the lower Hudson River till the last days of April, and White-winged Crossbills at least till May 29, and almost certainly later, the stay of the latter birds in Berkshire, Mass., lapped over into June. On the 3d and 4th of that month I saw a flock of five or six in the town of Lanesboro, and there is little doubt that they might have been found still later on Mt. Greylock; especially as they seem to be rarely wholly absent at any season from the spruce woods of Mt. Monadnock, only 56 miles to the east-northeast. — GERALD H. THAYER, *Monadnock, N. H.*

Notes on the Spring Migration of Birds in the Northern Adirondacks, New York.— During the latter half of the second semester, from April until June, it is customary for the students of the Junior and Senior classes of the Cornell College of Forestry to spend their time in practical work in the demonstration forest at Axton, in the northern Adirondacks. It was while doing work as a student under the above conditions that I found time to make a hasty survey of the bird population of the region, and to prepare a check-list covering the period from April 16 to June 12, 1901.

Arriving as we did while snow still covered the ground, we found on hand few birds except the native winter residents, and hence were able to watch and note accurately the date at which the migrating birds reached this northern forest. Our work, too, was of a nature which took us daily into the woods and fields, and covered a wide range of territory, hence new arrivals were promptly seen and recorded.

To the best of my knowledge no list has been published giving dates at which birds in their northern migration arrive in this part of the Adirondack region, so I have ventured to append the result of my observations, claiming for the same no special merit or absolute degree of accuracy. The errors, however, lie rather in sins of omission than commission, as no birds are mentioned in the list which were not seen and identified with certainty. On the other hand, it is certain that several species visited the region which were not recorded, owing to the fact that they refused to pose before the opera glass long enough to have their identity established. Surrounding the Forester's camp at Axton is a clearing of several hundred acres, thus combining in close relation the conditions of open fields and dense forests, and in consequence broadening the field for bird study.

The following is a condensed copy of the check-list, showing first, under date of April 16, the birds seen on the day of our arrival:

April 16. Also occurring during the whole season.

Red-winged Blackbird. Common.
Rusty Grackle. Numerous flocks.

Ruffed Grouse. Tolerably common.
Song Sparrow. Common.
Robin. Tolerably common.
Downy Woodpecker. Not plentiful.
Junco. Tolerably common.
Crow. Tolerably common.
Chickadee. Tolerably common.

April 16 to 20.

Cliff Swallow. Several flocks.
Tree Sparrow. Nesting in small numbers.
Fox Sparrow. Not common.

April 20 to 25.

Pileated Woodpecker. Rare.
White-throated Sparrow. Common.
Hairy Woodpecker. Not common.
Red-shouldered Hawk. With young.
Chipping Sparrow. Common in small flocks.
Bluebird. Not plentiful.
Blue Jay. Not common.
Wilson Thrush. Tolerably common.

April 25 to 30.

Flicker. Tolerably common.
Goldfinch. Tolerably common in flocks.
Winter Wren. Tolerably common.
White-eyed Vireo. Not common.
Horned Lark. A few transient visitors.
Phœbe (Pewee). Tolerably common.
Vesper Sparrow. Not common.
Spotted Sandpiper. Not common.
Warbling Vireo. Not common.
Tree Swallow. Tolerably common in flocks.
Barn Swallow. Tolerably common.

April 30 to May 5.

Golden-crowned Kinglet. Not common.
Yellow-rumped Warbler. Tolerably common.
Ringed-billed Gull. Nesting in small numbers.
Kingfisher. Not common.
Yellow-bellied Sapsucker. Not common.
Red-breasted Nuthatch. Not common.
Fish Hawk. One pair nesting.

Purple Finch. Not common.
Loon. Rare.
Black Mallard. Not common.

May 5 to 10.

White-crowned Sparrow. Tolerably common.
Wood Thrush. Tolerably common.
Least Flycatcher. Not common.

May 10 to 15.

Black-throated Blue Warbler. Not common.
Bobolink. Small flock.

May 15 to 20.

Kingbird. Tolerably common.
American Redstart. Not common.
Yellow-throated Vireo. Not common.
Chestnut-sided Warbler. Tolerably common.
Black-and-White Warbler. Not common.

May 20 to 25.

Ruby-throated Hummingbird. Not common.
Rose-breasted Grosbeak. Rare.
Indigo Bunting. Not common.
Baltimore Oriole. Not common.
Catbird. Tolerably common.

May 25 to 30.

Nighthawk. Not common.
Blue Heron. Not common.
Canada Jay. Tolerably common.
Scarlet Tanger. Not common.
Whip-poor-will. Heard occasionally.
Black-poll Warbler. Not common.

May 30 to June 5.

Red-poll Warbler. Not common.
Chimney Swift. Not common.

Very little time was spent in hunting nests, hence information as to the nesting time is rather meagre. One good find, however, of this nature was the discovery of two Ring-billed Gull's nests on small rocks which projected above the water of a near-by pond. From six to twelve gulls

could be seen at almost any time in the vicinity of this pond, but the two flat nests of sticks and grass, one with two eggs and the other with three, were the only evidences of breeding which could be found, the whole colony of birds seeming to confine their attentions to these two nests. Frequently when disturbed four or five of the birds would settle around one nest, and then take flight, one by one, leaving one bird in final possession. The eggs were laid on May 7, and when last examined, four weeks later, had not yet hatched. The accompanying photograph (Pl. IX, fig. 2, facing p. 287) shows the nature of the nest and the marking of the eggs. In the top of a dead pine and within rifle shot of the gull's nesting site was found the nest of the only pair of Ospreys seen in the region.

Many notes were kept concerning the doings and habits of the various birds, but they do not differ materially from records kept elsewhere and hence need not be mentioned. One unusual occurrence, however, was the evening drumming of a Ruffed Grouse during a period of some three weeks in May. Beginning each evening about nine o'clock, this energetic bird, at regular intervals, would sound the rolling, drum-like beat so characteristic of the species, often continuing its subdued love tattoo until late into the night.— E. A. STERLING, *Brooklyn, Pa.*

Some Notes from Western Texas. — An unexpected delay in the publication of the results of our work in Texas under the auspices of the Biological Survey has suggested the desirability of making known through the medium of 'The Auk' some of our more interesting discoveries in the western part of the State. With but few exceptions the species mentioned below are unrecorded from Texas.

Columba fasciata. — Common in the Chisos, Davis, and Guadalupe Mountains.

Syrnium occidentale. — Found by Mr. Vernon Bailey and Mr. L. A. Fuertes in the Guadalupe Mountains.

Antrostomus macromystax. — Common in the Chisos Mountains, and noted also in the Guadalupe Range.

Aëronautes melanoleucus. — Of regular occurrence in the Chisos, Davis, and Guadalupe Mountains.

Cœligena clemenciæ. — Common in the higher parts of the Chisos Mountains.

Calothorax lucifer. — Taken in the Chisos Mountains.

Myiarchus nuttingi. — Found in the hills south of Alpine.

Empidonax difficilis. — Occurs in the Chisos and Guadalupe Mountains.

Cyanocitta stelleri diademata. — Of tolerably common occurrence in the Davis and Guadalupe Mountains.

Aphelocoma sieberii couchi. — Abundant in the Chisos Mountains, but not observed elsewhere.

Cyanocephalus cyanocephalus. — Mr. Bailey reported it tolerably common in the Guadalupe Mountains.

Loxia curvirostra stricklandi. — A small flock was found by Mr. Bailey in the Chisos Mountains.

Piranga hepatica. — Tolerably common in the Chisos, Davis, and Guadalupe Mountains.

Piranga rubra cooperi. — Common in suitable localites in extreme southwestern Texas.

Vireo solitarius plumbeus. — Tolerably common in the mountains west of the Pecos River.

Dendroica graciæ. — Mr. Bailey secured one specimen in the Guadalupe Mountains.

Wilsonia pusilla pileolata. — A tolerably common transient in western Texas.

Sitta pygmæa. — Common in the Guadalupe Mountains.

Parus inornatus griseus. — Fairly common in the Guadalupe Mountains.

Parus gambeli. — Common in the higher portions of the Davis and Guadalupe Mountains.

Psaltriparus plumbeus. — Abundant in the high mountains of southwestern Texas.

Psaltriparus melanotis lloydi. — Abundant in the Chisos and Davis Mountains, and also in the Ord Mountains south of Alpine.

Polioptila cærulea obscura. — Common in suitable localities west of the Pecos River. — HARRY C. OBERHOLSER, *Washington, D. C.*

RECENT LITERATURE.

Campbell's Nests and Eggs of Australian Birds.[1] — Mr. Campbell is to be congratulated by all his brother ornithologists on the satisfactory completion of a great undertaking. The 'Nests and Eggs of Australian Birds' forms a work of over 1100 rather closely printed pages, and treats of 765 species and subspecies. The eggs of many of the species are illustrated in the 27 colored plates, and the nests and eggs and breeding sites of many more in the large number of very effective half-tone illustrations, published as full-page plates. There is also a portrait of the

[1] Nests and Eggs | of | Australian Birds | including the | geographical distribution of the species | and | popular observations thereon | By | Archibald James Campbell | Melbourne | With Map, 28 Coloured Plates and 131 Photographic Illustrations | — | Part I [and II] | — | Printed for the author | by | Pawson & Brailsford, Sheffield | 1900. | (All rights reserved)— Roy. 8vo, Part I, pp. i–lx + 1–524; Part II, pp. 524–1102, frontispiece (pt. I), portrait of John Gould; frontispiece (pt. II), portrait of the author, map, 26 colored plates, and 131 half-tone illustrations.

author, and of the late John Gould, to the memory of whom and of his assistant John Gilbert the work is appropriately dedicated. The introduction contains an interesting account of the progress of Australian ornithology, beginning with biographical sketches of Gould and Gilbert, especially in relation to their Australian work, and including briefer notices of other pioneer workers in the same field.

The main text consists of, first, references to where the species is figured, its place of treatment in the British Museum 'Catalogue of Birds,' and to previous descriptions of its eggs. Then follows a brief statement of its geographical distribution, and a formal description of the nest and eggs, and finally, under 'Observations,' an account of its habits and distribution.

The avifauna of Australia presents an unusual number of birds of remarkable interest in respect to their domestic life and breeding habits, all of which are treated with the detail their peculiar interest warrants. The playgrounds of the several species of Bower Bird, and the wonderful nesting habits of the mound-building Megapodes are affectively illustrated by full-page half-tone plates, while the accompanying text is extended to meet the requirements of a detailed account of these remarkable "ornithological curiosities."

A few of the nests and eggs of Australian birds still remain undiscovered, but the proportion of the unknown is not large. Mr. Campbell's grand work well covers the field, and is a credit alike to his industry, intelligence, and zeal. While the greater part of the half-tone illustrations are from photographs taken by the author, many are credited to Mr. D. Le Souëf and a considerable number of others to Mr. S. W. Jackson. The colored plates of eggs are from drawings by Mr. C. C. Brittlebank, and represent the eggs of about 200 species which lay colored eggs, no white eggs being figured. — J. A. A.

Woodcock's Birds of Oregon.[1] — Mr. Woodcock's List numbers about 325 species, this number including a few introduced species. It has evidently been compiled with care, and forms a valuable record of the birds of the State. The author's own observations relate chiefly to the vicinity of Corvallis, and if his list had been confined to this locality we are not sure it would not have been quite as valuable, as it would certainly have been a more convenient and definite contribution to faunal literature. In compiling a list to include all the birds of the State — the need for which was doubtless felt to be urgent — the author has availed himself of

[1] An Annotated List of the Birds of Oregon. Compiled from data furnished by ornithologists throughout the State, together with extracts from Belding's "Land Birds of the Pacific District," and Bendire's "Life Histories of North American Birds." By A. R. Woodcock. Bull. No. 68. Oregon Agricultural Experiment Station, Corvallis, Oregon, Jan., 1902. 8vo, pp. 118.

not only the published records of Bendire, Belding, Anthony, Mearns, Merrill and others, but of the unpublished observations of a number of observers residing in different parts of the State, but mainly, naturally, west of the Cascades. These records are wisely given on the authority of the observer who made them, for while in most cases doubtless thoroughly trustworthy, the particular subspecies to which, in some instances, they purport to relate seems open to question, as in the case of some of the finches and sparrows. The arrangement and nomenclature of the A. O. U. Check-List have been adopted, but in respect to recent changes in the latter the later 'Supplements,' appear to have been overlooked. The List was prepared as a thesis for the degree of M. S. in the Oregon Agricultural College. It forms an excellent basis for further detailed work, and will doubtless prove not only a great convenience but a stimulus to future workers. — J. A. A.

Proceedings of the Delaware Valley Ornithological Club.[1] — The fifth annual report of the proceedings of the Delaware Valley Ornithological Club appears under the title 'Cassinia: An Annual devoted to the Ornithology of Pennsylvania and New Jersey,' and forms a well printed brochure of 60 pages and two plates. The frontispiece is a full-length portrait of John Cassin, and the first article is, very appropriately, a biographical sketch of this eminent Philadelphia ornithologist, by Mr. Witmer Stone. His brilliant career as an ornithologist is traced briefly and sympathetically by one upon whom, at least officially, the Cassinian mantle has fallen.

Mr. Francis R. Cope, Jr., gives an annotated list of the summer birds of parts of Clinton and Potter Counties, Pennsylvania, numbering 76 species, observed June 21–28, 1900. Several pages of introductory remarks relate to the changes in the fauna and flora of the Pennsylvania mountains through the removal of the original forest. "Wherever, indeed," says the author, "the original forest is disappearing under axe and fire, especially in those sections where the hemlock and other coniferous trees are being cut away, there just as surely we may look for the disappearance of most of our boreal birds and plants." Again, "where those forests still exist in large tracts, as, for example, they did a few years ago on North Mountain, there we find a very strong, if not a predominating, tinge of the Canadian fauna. On the other hand, where they have been entirely destroyed or broken up into isolated patches, those birds which may be regarded as typical of the Alleghanian fauna are in the majority."

Mr. William L. Baily describes his successful attempt to photograph a Nighthawk's nest and young, and an accompanying plate gives views of

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[1] Cassinia, A Bird Annual: Proceedings of the Delaware Valley Ornithological Club, No. V, 1901. 8vo, pp. 60, pll. 2. April, 1902.

the eggs and young *in situ*, as well as a larger view of the young birds. Other papers are: 'A Walk to the Paoli Pine Barrens,' by William J. Serrill; 'The Yellow-winged Sparrow in Pennsylvania,' by Samuel Wright; 'Trespassing of the Rose-breasted Grosbeak in the Carolinian Fauna,' by William B. Evans; 'Nesting of the Mockingbird in Eastern Pennsylvania,' by W. E. Roberts and W. E. Hannum; 'A Spring Migration Record for 1893–1900,' by Frank L. Burns, — a tabular record of observations made at Berwyn, Chester Co., Pa.; 'The Spring Migration for 1901,' as observed by different members of the Club at five localities; an abstract of the proceedings of the Club for 1901, containing many interesting records. 'Bird Club Notes,' a list of the officers and members, and an index complete this interesting record of the year's work of the Club. The Club membership consists of 14 active members, 1 Honorary member, 53 Associate members, and 31 Corresponding members. In this connection attention may be called to an interesting historical sketch of the Delaware Valley Ornithological Club, by Mr. Samuel N. Rhoads, one of its founders, published in the April, 1902, number of 'Bird-Lore,' with a photograph of the Club in session.— J. A. A.

Lucas on a New Fossil Flightless Auk.[1] — On the basis of a nearly complete humerus found in excavating a street tunnel at Los Angeles, California, Mr. Lucas has founded the new genus and species *Mancalla californiensis*, an extinct species of auk which he believes to have been flightless. He says: "The bird to which this humerus belonged was more highly specialized, more completely adapted for subaquatic flight, than the Great Auk, although the wings were not so extremely modified as those of the penguins .....The occurrence of a flightless auk at so low a geological horizon as the Miocene is of great interest, as indicating a much earlier origin for the family."— J. A. A.

Perkins and Howe's Preliminary List of the Birds of Vermont.[2]— The authors state that one of the main objects in publishing the present list is "that fuller information as to our resident and migratory birds may be gained"; and that they regard it "as in no sense final, but only provisional." Acknowledgments are made of indebtedness to previous publications on the birds of the State, and for much hitherto unpublished information generously contributed by correspondents. The number of

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[1] A Flightless Auk, *Mancalla californiensis*, from the Miocene of California. By Frederick A. Lucas. Proc. U. S Nat. Mus., Vol. XXIV, 1901, pp. 133, 134.

[2] A Preliminary List of the Birds Found in Vermont. By George H. Perkins, Ph. D., Professor of Natural History, University of Vermont, assisted by Clifton D. Howe, M. S. Assistant in Biology, University of Vermont. Twenty-first Ann. Rep. Vermont State Board of Agriculture for 1901 (1902), pp. 85–118. Also separate, pp. 1–34, Dec. 1901.

species recorded is 261, of which 19 are classed as permanent residents, 130 as migrants, 107 as summer residents, and 14 as winter residents. Although "the nomenclature used by the American Ornithologists' Union has been followed," it has not been brought up to date, "the names given being those found in Ridgway [*sic*] and other accessible manuals," better to adapt the list "for popular use," as "the list is not issued for the professional ornithologist."

The list is briefly annotated, but is evidently not based on thorough acquaintance with the ornithology of the State, and thus unfortunately contains some errors, both of omission and commission.

These need not be here dwelt upon, since Mr. Reginald Heber Howe, Jr., has pointed them out in a recent extended review of the list.[1] Mr. Howe states that he had had in view for some time the publication of a list of the birds of Vermont, and that he had "collected and compiled all the available data," which he now presents in the form of a review of Professor Perkins's 'Preliminary List.' Each species is taken "for convenience sake," in the order of the original list, and corrections of misstatements as to seasons or manner of occurrence are corrected, species improperly included are eliminated, and omitted species are added. According to this author's 'recapitulation' (p. 22), the total number of species entitled to recognition as Vermont birds is 255, as against "266" (261+3 informally mentioned = 264) in the Perkins list, 27 species and 3 subspecies having been "expunged," and 14 species and 2 subspecies added. Of the additions, however, four-fifths are water birds, for the most part of casual or accidental occurrence, and several of the "expunged" species have quite as good a right to a place in the list as some of those Mr. Howe adds. In other cases Professor Perkins admitted species on the authority (which he states) of other observers, which authority, justly or unjustly (doubtless the latter, in some cases) Mr. Howe rejects as insufficient. In short, Professor Perkins's list is not such a bad list, as lists go when not prepared by an expert; it contains loose statements as to the manner of occurrence of quite a number of species, includes a few on insufficient data, and omits a few others, usually of rare or accidental occurrence, recorded in such a way as readily to be overlooked by the ordinary compiler. On the other hand Mr. Howe's review, while correcting many of the defects of the Perkins list, is hypercritical in spirit, and not altogether consistent in treatment of practically similar cases. Take the Canvasback Duck, Barrow's Golden-eye, the Least Bittern, Dowitcher, etc., included as positively known to occur by Perkins but thrown out by Howe because no Vermont specimen can be cited, and the Marbled Godwit, etc., included on the basis of its

[1] A Review of Prof. George H. Perkins' "A Preliminary List of the Bird s found in Vermont." By Reginald Heber Howe, Junior. Contributions to North American Ornithology, Vol. II, pp. 5–22. Jan. 30, 1902.

mention in Williams's 1794 List, which in other cases is rejected by Mr. Howe as incompetent authority.

Another feature hardly fair to Mr. Perkins is the rejection in Mr. Howe's 'Review' of ten species which, without direct comparison of the two lists, the reader would suppose were to be found in the Perkins list, but which are not, and are introduced by Howe for comment because accredited to Vermont, as he believes, on insufficient evidence.

Mr. Howe's 'Review' is, however, an important contribution to a more correct knowledge of Vermont birds, and together the two papers form a substantial basis for further work. — J. A. A.

Packard's 'Lamarck, His Life and Work.'[1] — Although Lamarck cannot be ranked as an ornithologist, his views on evolution, and the life of the man cannot fail to be of interest to every biologist. In this volume Dr. Packard has very charmingly brought together the little that is known of his personal history and heroic struggle with many adverse circumstances, and a translation of the more important of his writings relating to evolution. That he paved the way for the doctrine so ably established by Darwin half a century later has become duly recognized. Yet the views of these two great investigators were in reality quite different, Lamarck's being the broader, and in some respects the more fundamental. In a word, Lamarck was an evolutionist in a broad sense, Darwin a natural selectionist. Lamarck was a believer in the transmutation of species through the direct influence of environment, the use and disuse of parts, effort, habit; the 'survival of the fittest' principle, or 'natural selection' was the important contribution of Darwin. While Darwin has his multitude of followers, so has Lamarck. Neolamarckism is only Lamarckism shorn of certain crudities naturally involved in the first conception of a great theory when biology was in its infancy.— J. A. A.

'Upland Game Birds.'[2] — This is the second volume, in point of issue, of the 'American Sportsman's Library' series, to be completed in ten volumes, under the editorial supervision of Mr. Caspar Whitney, the

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[1] Lamarck | the Founder of Evolution | His Life and Work | with translations of his | writings on Organic Evolution | By | Alpheus S. Packard, M. D., LL. D. | Professor of Zoology and Geology in Brown University; author of "Guide to the | Study of Insects," "Text-book of Entomology," etc., etc. | .... | Longmans, Green, and Co. | 91 and 93 Fifth Avenue, New York | London and Bombay | 1901. — 8vo, pp. xiv+451, with illustrations.

[2] Upland Game Birds | By | Edwyn Sandys | and T. S. Van Dyke | Illustrated by L. A. Fuertes, A. B. Frost | J. O. Nugent, and C. L. Bull | [Vignette] New York | The Macmillan Company | London: Macmillan & Co., Ltd. | 1902 | All rights reserved. American Sportsman's Library Series. 8vo, pp. ix+429, 9 half-tone plates. Price $2.00.

editor of the Magazine 'Outing.' The first of the series is entitled 'The Deer Family,' and is written largely by Theodore Roosevelt, with articles by T. S. Van Dyke, D. G. Elliot, Andrew J. Stone and others, with maps by C. Hart Merriam, and illustrations by Carl Rungus. The first volume is excellent — it could hardly be otherwise under such authorship — and the second is quite up to the standard of the first.

'Upland Game Birds' cannot fail to interest alike the sportsman, the ornithologist, and the general reader. Mr. Edwyn Sandys, who is the author of about seven eights of the volume, is a keen field observer and a pleasing writer, whose experience covers the whole field of his subject, including the natural history as well as the sportsman's side, with both of which he is in fullest sympathy. In addition to the rasorial birds, which naturally constitute the bulk of the upland game birds, the work includes the Cranes, the Mourning Dove, the Woodcock, Bartram's or 'Upland' Plover, and the Golden Plover. Mr. T. S. Van Dyke writes of the 'Quail and Grouse of the Pacific Coast' (pp. 377–417), while all of the others (pp. 1–374) are treated by Mr. Sandys. Of the eight full-page plates, illustrating as many species of game birds, five are by Mr. Fuertes, two by Mr. Nugent and one by Mr. Bull. — J. A. A.

Richmond's List of Generic Terms proposed for Birds during 1890–1900.[1] — This valuable aid to workers in systematic ornithology comprises not only the generic and subgeneric terms proposed since the publication of Waterhouse's well-known 'Index Generum Avium,' some 475 in number, but also includes about 200 overlooked or omitted by Waterhouse, the total number of names here listed being 675. The list is constructed on an exceedingly useful plan, the family to which each genus belongs being indicated, and fossil genera being distinguished from the living; the type species of each is indicated, and the reason stated for the proposal of names given to replace earlier ones; and, finally, the derivation of the name. At the end is a classified list of the names, arranged alphabetically under families. The work is thus most admirably planned, and has evidently been executed with great care. Its usefulness cannot easily be overestimated.

A glance over the list suffices to make evident several interesting facts, namely: (1) that of the 475 generic and subgeneric terms published during the eleven years, 1890–1900, about one fourth relate to extinct forms; (2) that about one fifth, or nearly 100, have been given "on grounds of purism," or for other needless reasons; (3) that, despite recent noteworthy activity in this line, only about one tenth of the names given have been

[1] List of Generic Terms propose for Birds during the years 1890 to 1900, inclusive, to which are added names omitted by Waterhouse in his "Index Generum Avium." By Charles W. Richmond, Assistant Curator, Division of Birds. Proc. U. S. Nat. Mus., Vol. XXIV, No. 1267, pp. 663–729. May, 1902.

required for the purpose of replacing preoccupied names; and (4) that one half of the new names have been bestowed in christening groups believed by the authors of the names to be new. It may be added that the names needlessly, or knowingly, given to replace others, generally on avowed grounds of purism, are chargeable mainly to two authors, too well known for their efforts to 'purify' zoölogical nomenclature to require mention in the present connection, and not to any general proneness on the part of ornithological systematists in general to this sort of purification.— J. A. A.

Oberholser's Review of the Horned Larks.[1] — The Horned Larks are known as an exceptionally plastic group, of wide distribution, ranging from the arctic regions well into the tropics, in both the Old World and the New, and hence subject to great diversity of environment. Such conditions are eminently favorable for differentiation and the segregation of local races. Of the 36 forms recognized by Mr. Oberholser, all but six are ranked as subspecies. Of *Otocoris alpestris* alone 23 forms are recognized, one of which occupies northern Europe and northern Asia, the rest being American, of which one is found in Colombia, several others in Mexico, and no less than 18 in North America, north of Mexico. The Old World forms include, besides *O. alpestris flava*, 5 other species and 8 additional subspecies, known as yet from scanty material, in comparison with the American forms. Of the 36 forms recognized by Mr. Oberholser, 8 are here described as new.

The trenchantly defined forms are few; in the other cases, both in the Old World and America, Mr. Oberholser finds that the forms insensibly grade into other forms, often into several other forms, "so that with all the connecting links represented it frequently becomes a matter of considerable difficulty satisfactorily to segregate the forms represented by such series." He also finds that "the reduplication of forms in far separated localites seems to be carried to the extreme" in the present group, which reduplication he attributes, in part, to the interbreeding of several closely allied forms where their ranges come together.

While Mr. Oberholser's material for his present 'Review' does not greatly exceed in amount that at the disposal of Dr. Dwight in his revision of the American forms of *Otocoris* in 1890, it is largely different, containing a much greater proportion of breeding birds, and much material from regions scantily or not at all represented in the material studied by Dr. Dwight, who had very little from points south of the United States. While Dr. Dwight recognized only 11 forms from North America, north of Mexico, Mr. Oberholser finds it expedient to recognize

[1] A Review of the Larks of the Genus *Otocoris*, By Harry C. Oberholser, Assistant Ornithologist, Department of Agriculture. Proc. U. S. Nat. Mus., Vol. XXIV, No. 1271, pp. 801–884, with maps and plates. June, 1902.

18, of which 5 are described as new and three others previously described are reinstated. *O. a. arenicola* Henshaw is treated as a synonym of *O. a. leucolæma* Coues, the habitat and characters of which were misinterpreted by Mr. Henshaw, whose ruling in the case has heretofore been followed. The subspecies *praticola*, *giraudi*, *merrilli*, *strigata*, *rubea*, *adusta*, and *pallida* stand practically as heretofore. True *alpestris* is restricted (in the breeding season) to northeastern North America, from Newfoundland northward, the Old World form of this group standing as *fulva* (Gmelin). *O. a. leucolæma* of Henshaw and Dwight (not of Coues) is separated into an Alaskan form *arcticola* (subsp. nov.) and *hoyti* Bishop, the latter occupying the Mackenzie Valley region. *O. a. enthymia* (subsp. nov.) fills in the small gap between the breeding ranges of *praticola*, *hoyti* and *leucolæma* (Saskatchewan and Assiniboia south to northern North Dakota). *O. a. insularis* of Townsend and *occidentalis* of McCall are rehabilitated, and the new forms *actia*, *ammophila* and *leucansiptila* occupy, respectively, small areas of the coast region of southern California and northern Lower California, the Mohave Desert and Owens Valley, and the region about Yuma, Arizona.

The paper is illustrated by six photographic illustrations showing different types of environment, and by four maps showing (1) the range of the genus, (2) the breeding areas of the American forms, and (3 and 4) the breeding areas of the Old World forms. These areas are necessarily in part hypothetical, especially for the Old World forms, and the number and relations of the forms can hardly be said to be as yet reduced to a certainty. Mr. Oberholser's review, however, is an important contribution to a most difficult subject, and will doubtless stand as the 'last word' for some time to come, although, in the nature of the case, his results must be held as more or less tentative. The identification of our Horned Larks is of course rendered more difficult through the increased number of forms, and only an *Otocoris* expert can hope to identify isolated specimens, especially when we find that three forms — *alpestris*, *hoyti* and *praticola* — are recorded from Long Island, New York, and that one of them, *praticola*, is liable to turn up as far west as central Arizona. — J. A. A.

Ogilvie-Grant on Recently Described American Gallinæ. — In an article in the April number of 'The Ibis' Mr. Ogilvie-Grant gives his opinion,[1] *ex cathedra*, concerning certain North American rasorial birds recently described by some of his American confrères. Whatever may be the case as regards available material from Mexico — we leave this phase of the subject to those most interested — when the comparative resources of the British Museum collection are in question, we feel sure

[1] Remarks on the Species of American Gallinæ recently described, and Notes on their Nomenclature. By W. R. Ogilvie-Grant. Ibis, April, 1902, pp. 233–245.

that we on this side of the water are not 'out in the cold' when it comes to the consideration of the North American Tetraonidæ. Mr. Grant gives a list of such of the "new species and subspecies of American Game-birds," described since 1893, as he does not approve, "with remarks on and identifications of those which are not considered valid by the writer, and with his reasons for proposing to suppress them."

The first on the list is *Lagopus leucurus altipetens* Osgood, of which he says: "I have compared three *adult males in autumn plumage* from Colorado (one being from Blaine's Peak, the typical locality of *L. l. altipetens*) with two males and a female in autumn plumage from the Cascade Mountains, and find them absolutely identical." This disposes, from Mr. Grant's point of view, of the whole case of *L. l. altipetens*, he apparently being quite unaware that his comparison of specimens from Colorado and the Cascade Mountains has no bearing on the case. The status of the Alaska form, which is the question at issue, is not touched. A comparison of a large series in the American Museum from the Kenai Peninsula with other comparable material from Colorado shows a very striking difference between the two forms, both in size and coloration, a difference that probably Mr. Grant could not fail to recognize if he had the same material. In all probability the birds from the Cascade Mountains and Colorado are not different, and so far as we know no difference between them has been claimed. We doubt, also, whether birds from latitude 54° in the Rocky Mountains, the type region of *L. leucurus* Swainson, would prove separable from the Colorado bird, judging from winter specimens from Alberta. In other words, Mr. Osgood should probably have named the Alaska form instead of that from Colorado. So much then for Mr. Grant's first case on his list.

The second case is that of *Canachites canadensis* and its subspecies, none of which, of course, Mr. Grant admits. The A. O. U. Committee has recently gone over the subject with care, with abundant material, and found no difficulty in recognizing three forms (see this number of 'The Auk,' pp. 317, 318), in spite of "all the alleged differences in plumage being fully accounted for by season or age, and being in no way dependent on locality," as shown by Mr. Grant's material. As the amount of material examined in this case is large, and the same conclusions have been reached by several independent investigators outside of the A. O. U. Committee, we must account for this discrepancy of opinion between Mr. Grant and his American confrères on the basis of a radical difference in the point of view from which the subject is approached by the parties in controversy. In fact, we could expect from Mr. Grant no other conclusion, when we recall his position in relation to the *Bonasa umbellus* group (Cat. Bds. Brit. Mus., XXII, p. 87).

His third, and the last case we have space in this connection to notice, is the 'Turkey question,' where Mr. Grant differs from American ornithologists both as regards points of nomenclature and the admission of both species and subspecies. While he admits two species and two sub-

species (Cat. Bds. Br. Mus., XXII, pp. 387–390), or four forms in all, the same number as is recognized in the A. O. U. Check-List, which has four subspecies, he claims that Mr. Nelson in his description of his ***Meleagris gallopavo merriami***, "avoided" comparing it with ***M. g. intermedia***, "with which," says Mr. Grant, "his birds are obviously synonymous." We can assure Mr. Grant that, however that may have been, the two forms have since been carefully compared by others, with the result that, from the American point of view, they are considered separable (see *postea*, p. 318).

It would obviously be a waste of time to discuss the question of names, as between *gallopavo* and *mexicana*, but we may add that we fail to find "***Meleagris silvestris*** Vieillot" at the place cited, namely, "Nouv. Dict. d'Hist. Nat. IX, p. 447 (1817)," nor elsewhere in Vieillot's writings, although we do find at just that point ***Meleagris fera***, as well as in the Gal. Ois. II, 1825, p. 10, pl. 201. But we do find "? Meleagris sylvestris, *Vieill.*; *Pr. Bonap. Am. Orn.* pl. 9" in G. R. Gray's 'List of the Specimens of Birds in the Collection of the British Museum, Part V, Gallinæ,' 1867, p. 42. Turning to Bonaparte's 'American Ornithology,' Vol. I, 1825, we find "***Meleagris Gallopavo***" on plate 9, and "***Meleagris sylvestris***, VIEILL. *Nouv. Dict. d'Hist. Nat.* IX, p. 447," in his extensive list of citations on p. 79, which appears to be the origin of this reference as given later in Jardine's edition of Wilson's Ornithology and elsewhere. But we do not find the spelling *silvestris* as given by Mr. Grant. As both Coues and Elliot (*cf.* Auk, XIV, p. 231, and Grant, Ibis, April, 1902, p. 237) were misled by Mr. Grant's erroneous citation of Vieillot, perhaps after referring as follows to Mr. Elliot's statement regarding the Vieillot reference: "This inaccurate statement needs no further comment," he will kindly tell these unenlightened American ornithologists just where to find "***Meleagris silvestris*** Vieill.," and thus confer a favor.—J. A. A.

Clark's 'Birds of Lakeside and Prairie.'[1] — "The lakesides and prairies of the Middle West are rich in bird life. The opera glass is a much more satisfactory field companion than the shot gun." These extracts from the author's preface indicate at once the scope and spirit of this recent contribution to popular ornithology. The book consists of fourteen short chapters, parts of which have previously appeared in print, the titles of which suggest their character, as: 'Birds of a Smoky City'; 'The Songsters of the Skokie [Swamp]'; 'In Southern Hoosier Hills'; 'In Winter Fields'; 'On the Trail of Pokagon,' etc. The author shows himself to be familiar with his subject, writes pleasantly, and has thus been able to give to the public another very readable book about birds. The colored illustrations are from the well-known magazine 'Birds,' or 'Birds

[1] Birds of Lakeside | and Prairie | By | Edward B. Clark | With Sixteen Illustrations in color | A. W. Mumford, Publisher | Chicago and New York. Sm. 4to, pp. 150.

and Nature' (it has had several titles), and are very effective and for the most part quite satisfactory as a means of identifying the species figured. The faulty taxidermy of some of the specimens chosen for illustration rather mars their appearance for those who know how a bird really looks in nature. The work, however, is worthy of a cordial welcome and should aid substantially in popularizing bird study. — J. A. A.

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Sandys, Edwyn, and T. S. Van Dyke. Upland Game Birds. Illustrated by L. A. Fuertes, A. B. Frost, J. O. Nugent, and C. L. Bull. 8vo, pp. viii + 429, New York, The Macmillan Company, 1902. Price, $2.00.

Sharpe, R. Bowdler. (1) Sur une petite collection faite par le Père Hugh dans la Province du Shensi et d'autres parties de la Chine septentrionale. (Ornis, XI, 1901, pp. 173-185.) (2) On a collection of Birds made in Mongolia by Dr. Donaldson Smith and Messrs. J.-E. and G.-L. Farnum. (*Ibid.*, pp. 155–172.) (3) On the Birds collected during the Mackinder Expedition to Mount Kenya (P. Z. S., 1900, pp. 596–609, pl. xliii.) (4) On a collection of Birds made by Dr. Donaldson Smith in Northern Somaliland. (*Ibid.*, 1901, pp. 298–316.) (5) On a collection of Birds made by Dr. A. Donaldson Smith on his last expedition to Lake Rudolf and the Nile. (*Ibid.*, 1901, pp. 602–622, pl. xxxvi.) (6) On a small collection of Birds from Efulen in Cameroon, W. Afrika. (*Ibis*, Jan., 1902, pp. 89–96, pl. iv. (7) On the collection of Birds made by Sir Harry Johnson, K. C. B., in Equatorial Africa. (*Ibid.*, pp. 96–121, pl. v.)

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Tschusi zu Schmidhoffen, Viktor Ritter von. Ornithologische Kollectaneen aus Oesterreich-Ungarn und dem Occupations-Gebiete. (Orn. Monatsschr., XXVII, 1902, pp. 137–142.)

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Witherby, H. F. The Migration of Birds. (Reprint from 'Chamber's Journal,' pp. 16, 1902.)

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Naturalist, The, A Monthly Journ. Nat. Hist. for North of England, Nos. 543–545, April–June, 1902.

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Ornithologische Monatsschrift, XXVII, Nos. 1–4, Jan.–April, 1902.

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Ottawa Naturalist, XVI, Nos. 1–3, April–June, 1902.

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Proceedings Acad. Nat. Sci. Philadelphia, Pt. 3, 1901 (1902).

Science, N. S., XV, Nos. 378–390, 1902.

Zoölogist, The, (4), V, Nos. 64–66, April–June, 1902.

ERRATUM.—The cut illustrating Mr. Felger's paper in the April number (*antea*, p. 193) was unfortunately inserted upside down, the holes for binding shown in the cut, seeming to indicate that edge as the left hand edge of the sheet. The author (who did not see the proof), however, informs us the cut should be inverted, bringing the open spaces at the op.—EDD.

ELEVENTH SUPPLEMENT TO THE AMERICAN ORNITHOLOGISTS' UNION CHECK-LIST OF NORTH AMERICAN BIRDS.[1]

THE Committee met in Washington, April 17 to 23. All the members were present and took part in the work, four of them continuously, and three of them during the greater part of the session. Its work was greatly facilitated by previous reference of a large part of the questions to subcommittees, which submitted reports for the information and consideration of the committee on the special questions assigned them for investigation.

As at previous meetings of the Committee, it was found necessary to defer many cases owing to lack of material for their satisfactory investigation. All questions affecting the status of genera, subgenera and higher groups were again deferred. As heretofore, discrepancies in nomenclature arising from taking the 12th instead of the 10th edition of Linnæus's 'Systema Naturæ', and cases already settled by the Committee and raised merely as the expression of an author's opinion or preference, without the presentation of new evidence adverse to the Committee's ruling, were regarded as not requiring reinvestigation.

Several cases of generic names, where the substitution of one name for another depends on whether a name is tenable when merely an orthographical variant of another, were deferred for special consideration at the next meeting of the Committee, to be held in Washington next November.

Committee
C. HART MERRIAM, *Chairman.*
J. A. ALLEN.
WILLIAM BREWSTER.
JONATHAN DWIGHT, JR.
CHARLES W. RICHMOND.
ROBERT RIDGWAY.
WITMER STONE.

[1] Three Supplements have been issued since the publication of the Second Edition of the Check-List in 1895:

Eighth Supplement, Auk, XIV, 1897, pp. 117–135.

Ninth Supplement, Auk, XVI, 1899, pp. 97–133.

Tenth Supplement, Auk, XVIII, 1901, pp. 295–320.

I. ADDITIONS TO THE CHECK-LIST AND ACCEPTED CHANGES IN NOMENCLATURE.

3*a*. **Fratercula arctica glacialis** (TEMM.). This becomes

Fratercula arctica naumanni NORTON.

Fratercula arctica naumanni NORTON, Proc. Portland Soc. Nat. Hist. II, May, 1901, 144.

Fratercula glacialis (TEMM. Man. d'Orn, II, 1820, 933) was originally given exclusively to the American bird recognized in the Check-List as *Fratercula arctica*, and not to the bird which has been commonly known under that name, which latter has been properly renamed (*cf.* NORTON, *l. c.*) *F. arctica naumanni.*

51*a*. **Larus argentatus smithsonianus** (COUES). This is to be eliminated from the Check-List as not satisfactorily distinguishable from *Larus argentatus*. *Cf.* KNIGHT, Auk, XVII, Jan. 1900, 63; DWIGHT, *ibid.* XVIII, Jan. 1901, 58–61; ALLEN, *ibid.* XIX, July, 1902, 283.

92. **Puffinus auduboni** FINSCH. An earlier name (*cf.* RILEY, Auk, XIX, April, 1902, 195) renders necessary the following change

92. **Puffinus lherminieri** LESSON.

Puffinus lherminieri LESSON, Rev. Zool. April, 1839, 102.

133*a*. **Anas obscura rubripes** BREWST.

Red-legged Black Duck.

Anas obscura rubripes BREWST. Auk, XIX, April, 1902, 184.

[B 577, *part*, C 489, *part*, R 602, *part*, C 708, *part.*]

GEOG. DIST.— Atlantic Coast, during migration, from Newfoundland to Virginia, and west to Arkansas; breeding range not definitely known, but includes northern Labrador and Hudson Bay region.

211.1. **Rallus scottii** (SENNETT). This is reduced to a subspecies and will stand as

211*b*. **Rallus crepitans scottii** (SENNETT).

Rallus longirostris scottii SENNETT, Auk, V, July, 1888, 305.

Rallus crepitans scottii A. O. U. COMM.

210.1. **Rallus crepitans waynei** BREWSTER. The number should be corrected to read 211*c*.

GENUS **COLINUS** LESSON (Check-List, 2d ed., p. 106). The authority for the genus should stand (*cf.* RICHMOND, Auk, XIX, Jan. 1902, 79) as follows:

GENUS **COLINUS** GOLDFUSS.

Colinus GOLDFUSS, Handb. der Zool. II, 1820, 220. Type, "*Perdix mexicanus*, Caille de la Louisiana, Pl. Enl. 149" = *Tetrao virginianus* LINN.

298. **Canachites canadensis** (LINN.) (Check-List, 2d ed. 111; Ninth Suppl., Auk, XVI, 1899, 107; Tenth Suppl. Auk, XVIII, 1901, 298.).

Since the publication of the second edition of the Check-List No. 298 has been separated into several subspecies, and the group will now stand as 298, 298*b*, and 298*c*; 298*a* being a synonym of 298, as now restricted, is eliminated.

298. **Canachites canadensis** (LINN.).

Hudsonian Spruce Grouse.

Tetrao canadensis LINN. S. N. ed. 10, I, 1758, 159.

Canachites canadensis GRANT, Cat. Bds. Br. Mus. XXII, 1893, 69.

GEOG. DIST.— Labrador, Hudson Bay region, and westward to eastern Alaska.

298*a*. **Canachites canadensis labradorius** BANGS. Check-List, Tenth Suppl. (Auk, XVIII, 1901, 298). This is cancelled, being a synonym of No. 298, the type locality of which is Hudson Bay, in the same faunal zone as that of *labradorius*. (*Cf.* NORTON, Proc. Portland Soc. Nat. Hist. II, 1901, 151, 152).

298*b*. **Canachites canadensis osgoodi** BISHOP. This stands without change, to which is added:

298*c*. **Canachites canadensis canace** (LINN.).

Canadian Spruce Grouse.

Tetrao canace LINN. S. N. ed. 12, I, 1766, 275.

Canachites canadensis canace NORTON, Proc. Portland Soc. Nat. Hist. II, Art. viii, May, 1901, 151.

[B 460, *part*, C 380, *part*, R 472, *part*, C 555, *part*.]

GEOG. DIST.— Northern Minnesota, northern New York, northern New England, New Brunswick, and the Canadian zone of southern and eastern Canada.

310. **Melagris gallopavo** LINN. This is eliminated and is replaced by

310. **Meleagris gallopavo merriami** NELSON.

Merriam's Turkey.

Meleagris gallopavo merriami NELSON, Auk, XVII, April, 1900, 120.

GEOG. DIST. — Mountains of Arizona, western New Mexico, and probably southwestern Colorado, south to the Mexican border.

320*b*. **Columbigallina passerina bermudiana** (BANGS & BRADLEE).

Bermuda Ground Dove.

Columbigallina bermudiana BANGS & BRADLEE, Auk, XVIII, July, 1901, 250.

Columbigallina passerina bermudiana A. O. U. COMM.

[B —, C —, R —, C —.]

GEOG. DIST. — Bermuda Islands.

349. **Aquila chrysaëtos** (LINN.). The authority for this combination (*cf.* RICHMOND, Auk, XIX, Jan. 1902, 79) is

Aquila chrysaëtos SPRÜNGLI, in Andreæ's Briefe aus der Schweiz, 1776, 196.

[370*a*.] **Scotiaptex cinerea lapponica** (THUNB.). The authority and reference for the first description should be

Strix lapponica THUNBERG, K. Vet. Akad. nya Handl. XIX, 1798, 184. (*Cf.* RICHMOND, Auk, XIX, Jan. 1902, 79.)

372*a*. **Nyctala acadica scotæa** OSGOOD.

Northwest Saw-whet Owl.

Nyctala acadica scotæa OSGOOD, N. Am. Fauna, No. 21, 1901, 43.

[B 56, 57, *part*, C 328, *part*, R 401, *part*, C 483, *part*.]

GEOG. DIST. — Puget Sound region, north to Queen Charlotte Islands, British Columbia.

393*f*. **Dryobates villosus picoideus** (OSGOOD).

Queen Charlotte Woodpecker.

Dryobates picoideus OSGOOD, N. Am. Fauna, No. 21, 1901, 44.

Dryobates villosus picoideus A. O. U. COMM.

[B —, C —, R —, C —.]

GEOG. DIST. — Queen Charlotte Islands, British Columbia.

403*a*. **Sphyrapicus ruber notkensis** (SUCKOW).

Northern Red-breasted Sapsucker.

Picus ruber notkensis SUCKOW, Anfangsgr. Naturg. Thiere, II, i, 1800, 535.

Sphyrapicus ruber notkensis RICHMOND, Proc. Biol. Soc. Wash. XV, 89, April 25, 1902.

[B 87, *part*, C 303, *part*, R 269, *C, part*, C 448, *part.*]

GEOG. DIST.— Western British Columbia, south to the coast region of Washington and Oregon.

439. **Amizilis cerviniventris** (GOULD), Tenth Supplement, Auk, XVIII, 301. This should be corrected (*cf.* Auk, XVIII, p. 436) to stand as follows:

439. **Amizilis cerviniventris chalconota** (OBERH.).

Amazilia cerviniventris chalconota OBERHOLSER, Auk, XV, Jan. 1898, 32.

Amizilis cerviniventris chalconota OBERHOLSER, Proc. Acad. Nat. Sci. Phila. 1899, 207.

GENUS **MILVULUS** SWAINS. (Check-List, 2d. ed., p. 179) This must give place to *Muscivora* of earlier date (*cf.* OBERHOLSER, Auk, XVIII, April, 1901, 193), which will stand as

GENUS **MUSCIVORA** LACÉPÈDE.

Muscivora LACÉPÈDE, Disc. du Cours d'Hist. Nat. 1799, 5. Type, *Muscicapa forficata* GMELIN.

[442.] **Muscivora tyrannus** (LINN.).

Muscicapa tyrannus LINN. S. N. ed. 12, I, 1766, 325.

Muscivora tyrannus OBERHOLSER, Auk, XVIII, 1901, 194.

443. **Muscivora forficata** (GMEL.).

Muscicapa forficata GMELIN, S. N. I. ii, 1788, 931.

Muscivora forficata OBERHOLSER, Auk, XVIII, 1901, 194.

[450]. **Myiozetetes texensis** (GIRAUD). This becomes **Myiozetetes similis superciliosus** (BONAP.).

Tyrannus superciliosus BONAP. P. Z. S. 1837, 118.

Myiozetetes similis superciliosus NELSON, Auk, April, 1900, 124.

478*d*. **Cyanocitta stelleri carlottæ** OSGOOD.

Queen Charlotte Jay.

Cyanocitta stelleri carlottæ OSGOOD, N. Am. Fauna, No. 21, 1901, 46.

[B —, C —, R —, C —.]

GEOG. DIST.— Queen Charlotte Islands, British Columbia.

480.1. **Aphelocoma cyanotis** RIDGW.

Blue-eared Jay.

Aphelocoma cyanotis RIDGW. Man. N. Am. Bds. 1887, 357.

GEOG. DIST.— Mexican tablelands from the City of Mexico north through the States of Mexico, Hidalgo, San Luis Potosi, Coahuila, and Durango; casually to Sutton County, Texas.

The Rio Grande form is

480.2. **Aphelocoma texana** RIDGW.

Texan Jay.

Aphelocoma texana RIDGW. Auk, XIX, Jan. 1902, 70.

GEOG. DIST. — Southwestern Texas, from Concho and Kerr Counties west to the Davis Mountains.

498*d*. **Agelaius phœniceus fortis** RIDGW.

Thick-billed Redwing.

Agelaius phœniceus fortis RIDGW. Proc. Wash. Acad. Sci. III, April, 1901, 153.

[B 401, *part*, C 212, *part*, R 261, *part*, C 316, *part*.]

GEOG DIST. — Central North America, breeding northward; in migrations from Manitoba south to Illinois, Indian Territory, and western Texas, westward to and including the Rocky Mountains, and south to Arizona and Chihuahua.

498*e*. **Agelaius phœniceus neutralis** RIDGW.

San Diego Redwing.

Agelaius phœniceus neutralis RIDGW. Proc. Wash. Acad. Sci. III, April, 1901, 153.

[B 401, *part*, C 212, *part*, R 261, *part*, C 316, *part.*]

GEOG. DIST. — Great Basin district of United States, southwestward to southern California and northern Lower California.

498*f*. **Agelaius phœniceus caurinus** RIDGW.

Northwestern Redwing.

Agelaius phœniceus caurinus RIDGW. Proc. Wash. Acad. Sci. III, April, 1901, 153.

[B 401, *part*, C 212, *part*, R 261, *part*, C 316, *part.*]

GEOG. DIST. — Northwest coast, in Washington and British Columbia; northern California in winter.

505. **Icterus cucullatus** SWAINS. This becomes

Icterus cucullatus sennetti RIDGW.

Sennett's Oriole.

Icterus cucullatus sennetti RIDGW. Proc. Wash. Acad. Sci. III, April, 1901, 152.

GEOG. DIST. — Lower Rio Grande Valley.

512. **Quiscalus macrourus** SWAINS. This proves to intergrade with *Q. major* (*cf.* RIDGWAY, Proc. Wash. Acad. Sci., III, 1901, 152) and should stand as

513*a*. **Quiscalus major macrourus** (SWAINS.).

Quiscalus macrourus SWAINS. Anim. in Menag. 1838, 299.

Scaphidurus major macrourus RIDGWAY, Proc. Wash. Acad. Sci. III, 1901, 152.

Quiscalus major macrourus A. O. U. COMM.

515. **Pinicola enucleator canadensis** (CAB.). This becomes

Pinicola enucleator leucura (MÜLLER).

Loxia leucura MÜLLER, Volls. Natursyst. Suppl.- und Register-Band, 1776, 150.

Pinicola enucleator leucura RICHMOND, Auk, XIX, Jan. 1902, 85.

The name *leucura* has many years priority over *canadensis* (*cf.* RICHMOND, *l. c.*).

544.1. **Ammodramus sanctorum** COUES. This becomes

544*c*. **Ammodramus rostratus sanctorum** (RIDGW.).

Passerculus sanctorum Ridgw. Proc. U. S. Nat. Mus. V, 1883, 538, 539, in text.

Passerculus rostratus sanctorum RIDGW. Bds. N. and Mid. Am. I, 1901, 200.

Ammodramus rostratus sanctorum A. O. U. COMM.

546*a*. **Ammodramus savannarum perpallidus** (COUES). This becomes

Ammodramus savannarum bimaculatus (SWAINS.).

Ammodramus bimaculatus SWAINS. Philos. Mag. n. ser. I, 1827, 435.

Coturniculus savannarum bimaculatus RIDGW. Bds. N. and Mid. Am. I, 1901, 209.

Ammodramus savannarum bimaculatus A. O. U. COMM.

It is evident that *Ammodramus bimaculatus* is referable to this form; it has many years' priority over *perpallidus*.

565. **Spizella atrigularis**. The name *atrigularis* should be changed to **atrogularis**, to conform to the original spelling. (*Cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 322.)

567*a*. **Junco hyemalis oregonus**. The name *oregonus* should be changed to **oreganus**, to conform to the original spelling. (*Cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 283.)

576. **Peucæa arizonæ** RIDGW., and 577. **Peucæa mexicana** (LAWR.) prove to be inseparable from *Peucæa botterii*

(SCLATER), which must take their place in the Check-List. (*Cf.* RIDGWAY, Birds N. and Mid. Am. I, 1901, pp. 257–259.)

576. **Peucæa botterii** (SCLATER).

Botteri's Sparrow.

Zonotrichia botterii SCLATER, P. Z. S. 1857, 214.

Peucæa botterii SCLATER, Cat. Am. Bds. 1861, 116.

[B —, C 170*a*, R 227, C 253.]

GEOG. DIST.— Mexican plateau, north to the Rio Grande Valley and Southern Arizona.

588*e*. **Pipilo maculatus magnirostris** BREWSTER.

Large-billed Towhee.

Pipilo maculatus magnirostris BREWSTER, Auk, VIII, April, 1891, 146 (separates issued Feb. 17, 1891).

[B —, C —, R —, C —.]

GEOG. DIST.— Mountain districts of southern Lower California.

GENUS **EUETHEIA** REICHENBACH (Check-List 2d ed., p. 253) becomes

GENUS **TIARIS** SWAINSON.

Tiaris SWAINSON, Philos. Mag. n. ser. I, June, 1827, 438. Type, *Tiaris pusillus* SWAINS. *Cf.* RICHMOND, Auk, XIX, Jan. 1902, 87. Nos. [603] and [603.1] will stand as

[603.] **Tiaris bicolor** (LINN.).

Fringilla bicolor LINN. S. N. ed. 12, I, 1766, 324.

Tiaris bicolor RICHMOND, Auk, XIX, Jan. 1902, 87.

[603.1.] **Tiaris canorus** (GMEL.).

Loxia canora GMELIN, S. N. I, ii, 1788, 858.

Tiaris canora RICHMOND, Auk, XIX, Jan. 1902, 87.

612.2. **Petrochelidon melanogastra** (SWAINS.).

Mexican Cliff Swallow.

Hirundo melanogaster SWAINS. Philos. Mag. n. ser. I, May, 1827, 366.

P[etrochelidon] melanogastra CABANIS, Mus. Hein. I, 1850, 47.

[B —, C —, R —, C —.]

GEOG. DIST.— Mexico, south to Guatemala, north into Arizona, along the San Bernardino and Santa Cruz Rivers. (*Cf.* MEARNS, Proc. Biol. Soc. Wash. XIV, 178, Sept. 25, 1901.

615. **Tachycineta thalassina** (SWAINS.). This becomes

Tachycineta thalassina lepida (MEARNS).

Northern Violet-green Swallow.

Tachycineta lepida MEARNS, Proc. Biol. Soc. Wash. XV, March 5, 1902, 31.

Tachycineta thalassina lepida A. O. U. COMM.

[B 228, C 113, R 156, C 161.]

GEOG. DIST.— Western United States, from the eastern base of the Rocky Mountains to the Pacific, north to the Yukon Valley, south in winter to Costa Rica.

GENUS **CLIVICOLA** FORSTER (Check-List, 2d ed., 259; Ninth Suppl., Auk, XVI, Jan. 1899, 131). This becomes

GENUS **RIPARIA** FORSTER.

Riparia FORSTER, Syn. Cat. Brit. Bds. 1817, 17. Type, *Riparia europæa* FORSTER = *Hirundo riparia* LINN.

Riparia has actual priority, as well as page precedence, over *Clivicola*. Forster's work was issued in two parts; *Riparia* was published in the first part (p. 17), and *Clivicola* in a separately issued second part (p. 55), so that *Riparia* has clearly priority over *Clivicola*. Hence No. 616 of the Check-List will stand as

616. **Riparia riparia** (LINN.).

Hirundo riparia LINN. S. N. ed. 10, I, 1758, 192.

Riparia riparia SHARPE & WYATT, Monogr. Hirundinidæ, 1894, xliv.

631*b*. **Vireo noveboracensis bermudianus** (BANGS & BRADLEE).

Bermuda Vireo.

Vireo bermudianus BANGS & BRADLEE, Auk, XVIII, July, 1901, 252.

Vireo noveboracensis bermudianus A. O. U. COMM.

[B —, C —, R —, C —.]

GEOG. DIST.— Bermuda Islands. (Under No. 631, omit "Resident in Bermuda.")

631*c*. **Vireo noveboracensis micrus** NELSON.

Small White-eyed Vireo.

Vireo noveboracensis micrus NELSON, Auk, XVI, Jan. 1899, 30.

[B —, C —, R —, C —.]

GEOG. DIST.— Northeastern Mexico, northward to Rio Grande Valley, Texas. (*Cf.* MEARNS, Auk, XIX, Jan. 1902, 87.)

633*a*. **Vireo bellii pusillus** (COUES). This becomes a full species (*cf.* GRINNELL, Condor, III, 1901, 187) and will stand as

633.1. **Vireo pusillus** COUES.

681*d*. **Geothlypis trichas brachidactyla** (SWAINS.).

Northern Yellow-throat.

Trichas brachidactylus SWAINSON, Anim. in Menag. Jan. 1838, 295.

Geothlypis trichas brachidactyla W. PALMER, Auk, XVII, July, 1900, 221.

[B 170, *part*, C 97, *part*, R 122, *part*, C 141, *part*.]

GEOG. DIST. — Northern Pennsylvania, New York and New England, eastward and northward to Newfoundland and Hudson Bay; south in migration to Cuba and Costa Rica.

703*a*. **Mimus polyglottos leucopterus** (VIGORS).

Western Mockingbird.

Orpheus leucopterus VIGORS, Zool. Voy. Blossom, 1839, 18.

Mimus polyglottos leucopterus MEARNS, Auk, XIX, Jan. 1902, 70.

[B 253, *part*, C 8, *part*, R 11, *part*, C 15 *part*.]

GEOG. DIST. — Southwestern United States, from Texas to the Pacific, southward into Mexico and Lower California.

GENUS **HARPORHYNCHUS** CABANIS (Check-List, 2d ed., p. 292) becomes

GENUS **TOXOSTOMA** WAGLER.

Toxostoma WAGLER, Isis, May, 1831, 528. Type, *Toxostoma vetula* WAGLER = *Orpheus curvirostris* SWAINS. (*Cf.* RICHMOND, Auk, XIX, Jan. 1902, p. 89.)

Toxostoma will also replace *Methriopterus* REICH. as a subgenus; *Harporhynchus* is still tenable in a subgeneric sense as now used in the Check-List.

Nos. 705 to 712 will stand as follows:

705. **Toxostoma rufum** (LINN.).

Turdus rufus LINN. S. N. ed. 10, I, 1758, 169.

Toxostoma rufum CAB. Arch f. Naturg. 1847, i, 207.

706. **Toxostoma longirostre sennetti** (RIDGW.).

Harporhynchus longirostris sennetti RIDGW. Proc. U. S. Nat. Mus. X, Aug. 6, 1888, 506.

Toxostoma longirostris sennetti RICHMOND, Auk, XIX, Jan. 1902, 89.

707. **Toxostoma curvirostre** (SWAINS.).

Orpheus curvirostris SWAINS. Philos. Mag. n. ser. I, 1827, 369.

Toxostoma curvirostris BONAP. Consp. Av. I, 1850, 277.

707*a*. **Toxostoma curvirostre palmeri** (COUES.).

Harporhynchus curvirostris var. *palmeri* COUES, Key N. Am. Bds. 1872, 351.

Toxostoma curvirostris palmeri RICHMOND, Auk, XIX, Jan. 1902, 89.

708. **Toxostoma bendirei** (COUES).

Harporhynchus bendirei COUES, Am. Nat. VI, 1873, 330.

Toxostoma bendirei RICHMOND, Auk, XIX, Jan. 1902, 89.

709. **Toxostoma cinereum** (XANTUS).

Harporhynchus cinereus XANTUS, Proc. Acad. Nat. Sci. Phila. 1859, 298.

Toxostoma cinerea RICHMOND, Auk, XIX, Jan. 1902, 89.

709*a*. **Toxostoma cinereum mearnsi** (ANTHONY).

Harporhynchus cinereus mearnsi ANTHONY, Auk, XII, Jan. 1895, 53.

Toxostoma cinerea mearnsi RICHMOND, Auk, XIX, Jan. 1902, 89.

710. **Toxostoma redivivum** (GAMBEL).

Harpes rediviva GAMBEL, Proc. Acad. Nat. Sci. Phila. 1845, 264.

Toxostoma rediviva GAMBEL, Journ. Acad. Nat. Sci. 2d ser. 1847, 42.

711. **Toxostoma lecontei** LAWR.

Toxostoma lecontei LAWR. Ann. Lyc. N. Y. V, 1852, 121.

712. **Toxostoma crissalis** HENRY.

Toxostoma crissalis HENRY, Proc. Acad. Nat. Sci. Phila. 1858, 117.

GENUS **ANORTHURA** RENNIE (Ninth Suppl., Auk, XVI, 1899, 125). *Anorthura* is a strict equivalent of *Troglodytes*. Hence *Anorthura* of the Check-List becomes

GENUS **OLBIORCHILUS** OBERHOLSER.

Olbiorchilus OBERHOLSER, Auk, XIX, April, 1902, 177. Type, *Motacilla troglodytes* LINN.

Anorthura RENNIE is a pure synonym of *Troglodytes* CUVIER, for which it was proposed as a substitute. *Cf.* HOWE, Auk, XIX, Jan. 1902, 90; OBERHOLSER, *ibid.* Apr. 1902, 175. Hence Nos. 722, 722*a*, 722*b*, 723, and 723.1 will stand as follows:

722. **Olbiorchilus hiemalis** (VIEILL.).

Troglodytes hiemalis VIEILL. Nouv. Dict. d'Hist. Nat. XXXIV, 1819, 514.

Olbiorchilus hiemalis OBERH. Auk, XIX, April, 1902, 178.

722*a*. **Olbiorchilus hiemalis pacificus** (BAIRD).

Troglodytes hyemalis var. *pacificus* BAIRD, Rev. Am. Bds. I, Sept. 1864, 145.

Olbiorchilus hiemalis pacificus OBERH. Auk, XIX, April, 1902, 179.

722*b*. **Olbiorchilus hiemalis helleri** (OSGOOD).

Anorthura hiemalis helleri OSGOOD, Auk, XVIII, April, 1901, 181.

Olbiorchilus hiemalis helleri OBERH. Auk, XIX, April, 1902, 179.

723. **Olbiorchilus alascensis** (BAIRD).

Troglodytes alascensis BAIRD, Trans. Chicago Ac. Sci. I. 1869, 315, pl. xxx, fig. 3.

Olbiorchilus alascensis OBERH. Auk, XIX, April, 1902, 178.

723.1 **Olbiorchilus meligerus** (OBERH.).

Anorthura meligera OBERH. Auk, XVII, Jan. 1900, 25.

Olbiorchilus meligerus OBERH. Auk, XIX, April, 1902, 178.

759. **Hylocichla aonalaschkæ** (GMEL.) This becomes

Hylocichla guttata (PALLAS).

Alaska Hermit Thrush.

Muscicapa guttata PALLAS, Zoog. Rosso-Asiat. I, 1831 (1826), 465. Type locality, Kadiak Island.

Hylocichla guttata BREWSTER, Bds. Cape Region, L. Calif. (in press).

GEOG. DIST. — Northwest coast region, from Alaska to southern British Columbia, and southward in winter.

Turdus aonalaschkæ GMELIN (S. N. I, ii, 1788, 808) is based on a young bird, and is unidentifiable. *Muscicapa guttata* is readily determinable, and has a definite type locality. Nos. 759*a*, 759*b*, and 759*c*, will stand as follows:

759*a*. **Hylocichla guttata auduboni** (BAIRD).

Audubon's Hermit Thrush.

Turdus auduboni BAIRD, Rev. Am. B. June, 1864, 16.

Turdus guttatus β auduboni RIDGWAY, Orn. 40th Parallel, 1877, 394.

Hylocichla guttata auduboni BREWSTER, Bds. Cape Region, L. Calif. (in press).

759*b*. **Hylocichla guttata pallasii** (CAB.).

Hermit Thrush.

Turdus pallasii CABANIS, Arch. f. Naturg. 1847, i, 205.

Hylocichla guttata pallasii FAXON & ALLEN, Bds. Berkshire Co., Mass. 1900, 9 (in Coll. Berkshire Hist. and Sci. Soc. III, No. 2, 113, Feb. 1900).

To the above is now added:

759*c*. **Hylocichla guttata nana** (AUD.).
Dwarf Hermit Thrush.

Turdus nanus AUDUBON, Orn. Biog. V, 1839, 201.

Hylocichla guttata nana BREWSTER, Bds. Cape Region, L. Calif. (in press).

[B 150, *part*, C 4*b*, *part*, R 5, *part*, C 8, *part*.]

GEOG. DIST.—Pacific coast region, from Washington southward, breeding south to Sierra Nevada region, east in migrations to Nevada and Arizona and south to Lower California and western Mexico.

GENUS **HESPEROCICHLA** BAIRD (Check-List, 2d ed., p. 320). A prior name is found in *Ixoreus* BONAP.

GENUS **IXOREUS** BONAPARTE.

Ixoreus BONAPARTE, Compt. Rendus, XXXVIII, 3, note, Jan. 1854. Type, *Turdus nævius* GMELIN.

763. **Hesperocichla nævia** (GMEL.) becomes
Ixoreus nævius (GMEL.).
Varied Thrush.

Turdus nævius GMEL. S. N. I, ii, 1788, 817.

Ixoreus nævius RICHMOND, Proc. Biol. Soc. Wash. XV, 85, April 25, 1902.

763*a*. **Ixoreus nævius meruloides** (SWAINS.).
Northern Varied Thrush.

Orpheus meruloides SWAINSON, Faun. Bor.-Amer. II, 1831, 187.

Hesperocichla nævia meruloides GRINNELL, Auk, XVIII, April, 1901, 142.

Ixoreus nævius meruloides RICHMOND, Proc. Biol. Soc. Wash. XV, 85, April 25, 1902.

[B 156, *part*, C 2, *part*, R 9, *part*, C 5, *part*.]

GEOG. DIST.— Interior of northern Alaska and eastward, wintering in southern California.

II. PROPOSED CHANGES IN NOMENCLATURE NOT ADOPTED.

Aythya vs. *Nyroca* (*Cf.* HOWE & ALLEN, Bds. Mass. 1901, 53).

Aythya has been rejected as being a *nomen nudum* (*cf.* SALVADORI, Cat. Bds. Brit. Mus. XXVII, 1895, 334), but since the species now commonly referred to it were originally placed under it by its author, it cannot be properly construed in that sense. As both *Aythya* and *Nyroca* were published in the same year, with no evidence as to which has priority, there seems to be no good reason for change in respect to the use of *Aythya* in the Check-List.

211. **Rallus crepitans** vs. *Rallus longirostris crepitans* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 315).

There appears to be no good reason for the adoption of *longirostris* in the place of *crepitans* in this and the following case.

211*a*. **Rallus crepitans saturatus** vs. *Rallus longirostris saturatus* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 315).

232. **Macrorhamphus scolopaceus** vs. *M. griseus scolopaceus* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 316).

Intergradation between the two forms has not been satisfactorily shown.

287. **Hæmatopus bachmani** vs. *H. niger* (PALLAS).

If Pallas's Zoogr. Rosso-Asiat. be taken at 1826, as has uniformly been the case in the Check-List, there is no reason for the proposed change.

317. **Zenaida zenaida** vs. *Zenaida meridionalis* (*cf.* FORBES & ROBINSON, Bull. Liverpool Mus. I, 1899, 36).

It is evident that the birds identified by Forbes and Robinson as *Zenaida meridionalis*, cannot be the types of Latham's *Columba meridionalis*. (*Cf.* ALLEN, Auk, XIX, July, 1902, 286.)

320. **Columbigallina passerina terrestris** vs. *C. p. purpurea* (*cf.* W. PALMER, Osprey, V, 1901, 148).

The reasons for the proposed change are not considered to be well founded.

341. **Buteo albicaudatus sennetti** vs. *B. albicaudatus* (*cf.* GODMAN, Biol. Cent.-Am. Aves, III, 1900, 58).

There is nothing to show that the Committee was in error in accepting *sennetti* as a subspecies of *albicaudatus*.

358. **Falco richardsoni** vs. *F. columbarius richardsoni* (*cf.* BISHOP, N. Am. Fauna, No. 19, Oct. 1900, 75).

The status of the form is admittedly in doubt, but on the basis of present evidence no change is deemed advisable.

403. **Sphyrapicus ruber** vs. *S. varius ruber* (*Cf.* GRINNELL, Condor, III, Jan. 1901, 12).

Intergradation not satisfactorily proved.

Sphyrapicus ruber flaviventris (*cf.* OSGOOD, N. Am. Fauna, No. 21, 1901, 45).

Picus flaviventris VIEILL. proves to be a synonym of *Picus ruber notkensis* SUCKOW. (*Cf. antea*, p. 319, under *Sphyrapicus ruber notkensis*.)

Sphyrapicus varius daggetti GRINNELL, Condor, III, Jan. 1901, 12.

Suckow, in 1800, gave a new name (*notkensis*) to the northern form, which restricts the name *ruber* to the southern form named *S. v. daggetti* by Mr. Grinnell.

417*a*. **Antrostomus vociferus macromystax** vs. *A. macromystax* (*cf.* RILEY, Osprey, V, 1901, 101).

No change considered necessary until further evidence of the distinctness of the two forms becomes available.

460. **Contopus pertinax pallidiventris** vs. *Horizopus musicus* (*cf.* SHARPE, Hand-List, III, 1901, 141).

Tyrannula musica Swains. (in place of *pertinax*) is not considered as satisfactorily identifiable.

466. **Empidonax traillii** vs. *E. pusillus* (*cf.* SHARPE, Hand-List, III, 1901, 138).

469. **Empidonax wrightii** vs. *E. obscurus* (*cf.* SHARPE, *l. c.*).

As there is no new evidence presented, the Committee sees no reason for reversing its previous carefully considered ruling on these two cases.

523. **Leucosticte griseonucha** vs. *L. tephrocotis griseonucha* (*cf.* GRINNELL, Condor, III, 1901, 20; RIDGWAY, Bds. N. and Mid. Am. I. 1901, 72).

Evidence of intergradation does not appear to be sufficiently strong to warrant the Committee in reversing, at present, its decision in relation to the status of these forms.

Peucæa vs. *Aimophila* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I. 1901, 230.).

Although there is admittedly no distinct line of demarkation between the two groups, as they are commonly recognized, there

seems to be no reason for disturbing the present nomenclature of the Check-List by introducing the proposed change.

549.1. **Ammodramus nelsoni** vs. *A. caudacutus nelsoni*, and

549.1*a*. **Ammodramus nelsoni subvirgatus** vs. *A. caudacutus subvirgatus* (*cf.* RIDGWAY, Bds. N. and Middle Am. I, 1901, 221 and 223).

The evidence is insufficient to warrant a change from the Committee's previous ruling (*cf.* Ninth Suppl., Auk, XVI, 1899, 117, 118).

583*a*. **Melospiza lincolni striata** vs. *Melospiza lincolni* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 376).

There is fairly good ground for the recognition of *striata* as a subspecies.

600*a*. **Cyanospiza versicolor pulchra** vs. *C. versicolor* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 205).

As *C. v. pulchra* is a fairly stable form in Lower California, there seems to be no reason why the occurrence of intergrades in western Mexico should invalidate it as a reasonably good subspecies of *versicolor*. (*Cf.* BREWSTER, Bds. Cape Region, L. Calif., in press).

617. **Stelgidopteryx serripennis** vs. *S. ruficollis serripennis* (*cf.* BANGS, Proc. N. Engl. Zool. Club, II, 1901, 60).

The proposed change not considered expedient.

612. **Petrochelidon lunifrons** vs. *P. pyrrhonota* (*cf.* SHARPE & WYATT, Mon. Hirun. II, 523).

There is no new evidence to show that the change is necessary.

Seiurus vs. *Henicocichla* (*cf.* DUBOIS, Syst. Av. 1901, 436).

Dubois emends *Seiurus* to *Siurus* and then rejects it as too near *Sciurus!*

681*b*. **Geothlypis trichas ignota** vs. *Geothlypis trichas roscoe* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 318).

The reasons advanced in support of the proposed change are not satisfactory.

Troglodytes vs. *Hylemathrous* (*cf.* HOWE & ALLEN, Bds. Mass. 1901, 92; HOWE, Auk, XIX, 89).

Hylemathrous is a pure synonym of *Thryothorus*, and has no bearing on *Troglodytes*. (*Cf.* OBERHOLSER, Auk, XIX, 1902, 175.)

Anorthura vs. *Troglodytes* (*cf.* HOWE, Auk, XIX, 1902, 90).

Anorthura was proposed as a substitute for *Troglodytes* and is hence a synonym of it. See *antea*, p. 329, where *Anorthura* is replaced by *Olbiorchilus*.

756. **Hylocichla fuscescens** vs. *Turdus minor* DUBOIS, Syn. Av. 1901, 402.

Turdus minor GMEL. is not regarded as satisfactorily identifiable.

III. SPECIES AND SUBSPECIES NOT ACCEPTED.

Tyrannus tyrannus vexator BANGS (*cf.* MEARNS, Auk, Jan. 1902, 72).

A reëxamination of the case confirmed the Committee in its former ruling (*cf.* Ninth Supplement, Auk, XVI, July, 1899, 131), that the ascribed characters were too slight for recognition in nomenclature.

Passerculus sandwichensis labradorius HOWE, Contr. N. Am. Orn. I, Oct. 14, 1901, 1.

Considered to be inseparable from *Ammodramus sandwichensis savanna*.

Ammodramus sandwichensis xanthophrys GRINNELL, Condor, III, 1901, 21.

Not distinguishable from *A. sandwichensis alaudinus.*

Ammodramus caudacutus diversus BISHOP, Auk, XVIII, July, 1901, 269.

Found to be similar to examples from the coast of New Jersey and Long Island, and hence not separable from *A. caudacutus.*

Cardinalis bermudianus BANGS & BRADLEE, Auk, XVIII, July, 1901, 256 (June 30, 1901).

Cardinalis cardinalis somersi VERRILL, Am. Journ. Sci. (4) XII, July, 1901, 65 (June 30, 1901).

The characters assigned to the Bermuda bird are considered as too slight and inconstant to require recognition in nomenclature.

Zamelodia melanocephala capitalis (BAIRD). *Cf.* MCGREGOR, Condor, III, 1901, 41.

This is an earlier name for *Z. melanocephala microrhyncha* Grinnell, previously rejected by the Committee as not entitled to recognition (*cf.* Tenth Supplement, Auk, XVIII, July, 1901, 313).

Vireo pusillus albatus GRINNELL, Condor, III, 1901, 187.

Not satisfactorily distinguishable from *V. pusillus.* (*Cf.* BREWSTER, Bds. Cape Region L. Calif., in press.)

Galeoscoptes bermudianus BANGS & BRADLEE, Auk, XVIII, July, 1901, 253.

Not distinguishable from *G. carolinensis.*

Hylocichla aonalaschkæ verecunda OSGOOD, Auk, XVIII, April, 1901, 183.

Rejected as being the same as *Turdus nanus* AUD., which, as *Hylocichla guttata nana*, is adopted (*antea, p.* 331) as the name of the Dwarf Hermit Thrush. (*Cf.* BREWSTER, Bds. Cape Region L. Calif., in press.)

Sialia sialis bermudensis VERRILL, Am. Journ. Sci. (4) XII, July, 1901, 65.

Differences too slight and inconstant for recognition.

IV. DEFERRED FOR FURTHER INVESTIGATION.

Cyclorrhynchus vs. *Phaleris* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 314).

52. **Larus vegæ** vs. *L. argentatus* (*cf.* KOBBÉ, Auk, XIX, 1902, 19–24).

68*a*. **Fulmarus glacialis minor** vs. *F. glacialis.*

94. **Puffinus fuliginosus** vs. *P. griseus.*

120. **Phalacrocorax dilophus** vs. *P. auritus.*

121. **Phalacrocorax mexicanus** vs. *P. vigua mexicanus.*

123*a*, 123*b*. **Phalacrocorax pelagicus robustus** et **resplendens** vs. *P. pelagicus.*

124. **Phalacrocorax urile** vs. *P. bicristatus.*

127. **Pelecanus californicus** vs. *P. fuscus* [= *occidentalis*] *californicus.*

Olor vs. *Cygnus.*

The preceding seven cases, left over last year (*cf.* Tenth Suppl., Auk, XVIII, 1901, 314, 315), still remain unsettled.

193. **Ardea wardi** vs. *A. herodias wardi* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 315).

Rallus levipes BANGS, Bull. N. Engl. Zoöl. Club, I, 1899, 45.

Referred to Mr. Brewster as a subcommittee.

216.1. **Porzana coturniculus** (*cf.* Tenth Suppl., Auk, XVIII, 1901, 316). Referred to Mr. Brewster as a subcommittee.

[230.1.] **Gallinago major** vs. *G. media* (*cf.* Tenth Suppl., Auk., XVIII, 315).

277*a*. **Ægialitis meloda circumcincta** vs. *Æ. meloda* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 316). Referred to Dr. Dwight as a subcommittee.

Buteo borealis umbrinus BANGS, Proc. N. Engl. Zool. Club, II, 1901, 67.

Strigidæ vs. *Aluconidæ*, and **Strix** vs. *Aluco* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 316).

377. **Surnia ulula** vs. *S. ulula doliata* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 316).

Nyctala vs. *Cryptoglaux* (*cf.* RICHMOND, Auk, XVIII, 1901, 193).

Picoides arcticus tenuirostris BANGS, Auk, XVII, 1900, 131. Still deferred, owing to lack of material.

Antrostomus vs. *Caprimulgus* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 317).

Contopus vs. *Horizopus* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 317).

Contopus richardsoni saturatus BISHOP, Auk, XVII, 1900, 116. Again deferred on account of lack of material.

Coccothraustes vs. *Hesperiphona* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 57).

Ammodramus vs. *Passerculus* (*cf.* RIDGWAY, *l. c.* 187).

Ammodramus vs. *Centronyx* (*cf.* RIDGWAY, *l. c.* 202).

Ammodramus vs. *Coturniculus* (*cf.* RIDGWAY, *l. c.* 205).

501*a*. **Sturnella magna hoopesi** vs. *S. magna mexicana*.

501*b*. **Sturnella magna neglecta** vs. *Sturnella neglecta*.

Sturnella magna argutula BANGS.

The *Sturnella* cases (*cf.* Tenth Suppl., Auk, XVIII, 1901, 317) were again deferred on account of lack of time and material for their proper investigation.

Loxia curvirostra bendirei (*cf.* MERRIAM, N. Am. Fauna, No. 16, 1899, 123; RIDGWAY, Bds. N. and Mid. Am. I, 1901, 50).

567*b*. **Junco hyemalis connectens** vs. *J. oreganus shufeldti* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 285).

567*c*. **Junco hyemalis thurberi** vs. *Junco oreganus thurberi* (*cf.* RIDGWAY, *l. c.* 287).

567*d*. **Junco hyemalis pinosus** vs. *Junco oreganus pinosus* (*cf.* RIDGWAY, *l. c.* 288).

568.1. **Junco annectens** (Eighth Suppl., Auk, XIV, 1897, 129); eliminated as a hybrid between *J. caniceps* and *J. mearnsi* (*cf.* RIDGWAY, *l. c.* 276).

570*a*. **Junco phæonotus dorsalis** vs. *J. dorsalis* (*cf.* RIDGWAY, *l. c.* 397).

574*a*. **Amphispiza belli nevadensis** vs. *A. nevadensis* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 318).

Melospiza melodia vs. *M. cinerea*, involving the names of all the members of the group (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 349–378), the question of the status of the forms treated by Mr. Ridgway as subspecies of *M. cinerea*, and of several forms deferred last year (*cf.* Tenth Suppl., Auk, XVIII, 1901, 318).

These questions were all referred to a subcommittee, consisting of Messrs. Brewster, Stone, and Dwight, to report upon at the next meeting of the Committee.

Passerella (*cf.* Tenth Suppl., Auk, XVIII, 1901, 318). The consideration of the subspecies of the *Passerella iliaca* group was referred to a subcommittee consisting of Messrs. Brewster, Dwight, and Stone.

Pipilo fuscus carolæ, and three other forms of the *P. fuscus* group, as recognized in the Check-List, whose status or relationships have been recently questioned.

Referred to Messrs. Brewster, Dwight and Stone as a subcommittee for consideration.

602. **Sporophila morelleti sharpei** vs. *S. morelleti* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 575).

SUBFAMILY **Ptiliogonatinæ** vs. Family *Ptiliogonatidæ* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 21).

Lanius ludovicianus migrans W. PALMER (*cf.* Tenth Suppl., Auk, XVIII, 318).

Referred to Dr. Merriam as a subcommittee.

SUBFAMILY **Miminæ** vs. Family *Mimidæ* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 23).

Geothlypis trichas sinuosa GRINNELL, Condor, III, 1901, 65.

Geothlypis trichas scirpicola GRINNELL, Condor, III, 1901, 65.

Salpinctes obsoletus pulverius GRINNELL, Auk, XV, 1898, 238.

Again deferred, owing to lack of material.

SUBFAMILY **Sittinæ** vs. Family *Sittidæ* (*cf.* RIDGWAY, Bds. N. and Mid. Am. I, 1901, 22).

740*a*. **Parus hudsonicus stoneyi** vs. *Parus h. evura* (*cf.* Tenth Suppl., Auk, XVIII, 1901, 319).

Again deferred.

742*a*. **Chamæa fasciata henshawi** vs. *C. fasciata*, and

Chamæa fasciata intermedia (*cf.* Tenth Suppl., Auk, XVIII, 1901, 319).

The *Chamæa* cases were referred to Dr. Merriam as a subcommittee.

Hylocichla aonalaschkæ slevini GRINNELL, Auk, XVIII, 1901, 258.

All the cases involving the question of generic or subgeneric rank, scheduled in the Tenth Supplement (Auk, XVIII, 1901, pp. 319, 320); also the several new questions of like character, and of the family and subfamily rank of certain groups (as listed above), were necessarily deferred.